

THE SUSTAINABILITY OF U.S.-SUPPORTED
HEALTH, POPULATION, AND NUTRITION
PROGRAMS IN SENEGAL

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The views and interpretations expressed in this report are those of the authors and should not be attributed to the Agency for International Development.

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For any Tables, Figure Boxes, or Graphs that may be omitted from this document may be found on Microfiche.

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PREFACE

Why are the activities and benefits of some health development assistance programs sustained while others are not? Which contextual factors seem most important for sustainability? Which project characteristics? Do some types of health programs seem inherently unsustainable? How should sustainability be defined and measured? What guidance can we offer policymakers and project and program managers? What type of research is called for?

In 1986, the Center for development Information and Evaluation (CDIE) initiated a group of studies with special emphasis on assessing the sustainability of health project and program activities and benefits after A.l.D. funding ends. The decision to conduct these studies followed a prior set of evaluations carried out by A.l.D. in the early 1980s to try to understand more about the impact (the actual effects) of its projects and programs in the health sector. The impact evaluations show clearly that many of those activities had difficulty continuing after outside assistance was terminated. Sustainability has become an important development issue in health (as well as in other sectors) for both lender/donor countries and borrower/recipient countries.

The studies undertaken by CDIE in this area have taken several forms, including literature reviews, syntheses of existing A.l.D. evaluation reports, field studies of single completed health projects, and field studies taking a broad, sectoral, historical perspective. The present study of Senegal falls into this last category.

The Senegal report is based upon an initial desk study prepared by Abby Bloom that defined the central projects and areas of investigation, followed by a two-week field review in Senegal in March, 1989. This study was preceded by two other studies in Africa (Tanzania and Zaire) using the same basic approach and methodology. In addition, two studies were completed earlier in Latin America (Guatemala and Honduras) using a somewhat modified approach. By compiling a larger sample of cases in a range of country settings, we hope to be able to develop generalizations about different types of health projects in different types of social, economic and political contexts.

Finally, a significant body of related work by other offices in A.l.D., as well as other lenders/donors, has begun to accumulate which focuses on sustainability and adds to the issues and the discussion set forth in this study. This report does not attempt to reflect these recent works, which will be incorporated in subsequent analyses. The reader is asked to bear in mind, therefore, that we are presenting this report as an important study and set of findings in one country in the larger effort now in progress, not as the final word on the important issue of sustainability.

SUMMARY

This report is part of a series of sustainability studies implemented by the Center for Development Information and Evaluation in the Agency for International Development's Program and Policy Coordination Bureau (CDIE). These country studies use a consistent comparative methodology to review health, nutrition, population, and water supply and sanitation projects supported by the U.S. government. The central objective of the studies is to determine which projects were sustained and what factors (both of the country context and the project characteristics) were related to sustainability.

Sustainability is a complex and relative concept. We defined sustainability as the continuation of project activities (outputs) and benefits (outcomes) at least 3 years after A.I.D. funding ceased.

In Senegal we reviewed two major projects which were completed at least 3 years before the time of the field study:

- Bakel Irrigated Small Perimeters Project (1977-1985)--an agricultural project to develop irrigated agriculture which had two separate health care components:
 - an epidemiological survey
 - a Primary Health Care sub-component to assist in the development of village-level health services and mechanisms for community participation and cost-recovery.
- The Casamance Rural Development Project (1977-1985) with a health and nutrition component to train Rural Development Agents and Ministry of Health nurses in nutrition and health education, and to assist communities in the creation of village pharmacies.

Our review of the two completed projects suggests that one component of the Bakel project--the Epidemiological Survey--was unsustained and one component--the Primary Health Services Component--was fully sustained. The health and nutrition component of the Casamance Project was only modestly sustained, according to the evidence available to the team.

In our analysis we tried to relate a series of factors--both characteristics of the project itself and the context in which the project was implemented--to the sustainability of completed projects. Our small sample size obviously precludes drawing definite conclusions. However, if the conclusions of this study are confirmed by other studies, A.I.D. can more confidently draw

lessons for the design of future projects that can enhance their sustainability. We also reviewed major on-going projects in order to make suggestions about the likely sustainability of the current portfolio.

1. Context Factors

In light of the fact that so little was actually sustained in Senegal, our analysis suggests that several factors may contribute to an environment that is not particularly conducive to sustainability.

- Political factors seem to be particularly weak to enhance sustainability--state capacity is weak and commitment to social welfare is not manifested.
- Economic problems also appear to have provided a particularly poor environment for sustainability. The economic crisis has meant a government austerity program which limits the government's capacity to take responsibility for funding activities after donor funding stops. A declining economy also imposed restrictions on the ability of beneficiaries to pay for services.
- Institutional characteristics of the implementing agencies also appear not to have been conducive to sustainability. The ministries responsible for implementing projects were fragmented, unstable and did not have highly skilled officials.
- Weak national commitment to the goals of PHC (and also family planning) with no clear consensus and considerable conflict generated by these objectives undermined sustainability.

2. Project Characteristics

The Senegal projects suggest that the following project characteristics are related to sustainability:

- Vertical project administration was not conducive to sustainability. Some form of integration, at least on the periphery of the administrative system, was related to sustainability.
- Projects with management and administrative training were more likely to be sustained.
- In the financing area, we found that national absorption of project costs and cost-recovery were related to sustainability.

- Projects which provided significant training activities were also more likely to be sustained.
- Projects which created a demand for services were more likely to be sustained.
- Sustained projects were viewed by participants as being effective in achieving goals and objectives.
- Community participation appears to have been important for sustainability in the PHC projects. This dimension may have been important also for cost-recovery elements of the projects.

Projects with long term technical assistance were also more likely to be sustained.

- We also found some support for longer projects being more sustainable than shorter projects.

3. Future Guidelines for Sustainability

This study suggests that significant efforts may be necessary to improve the context for sustainable projects.

It is likely that USAID should plan for a long term commitment to improve the economic and institutional context to assure that the appropriate infrastructure will be in place and that sufficient economic resources will be available from both public revenues and from beneficiaries to support continuation of project activities.

Even in this unfavorable environment there are six lessons from this study that can enhance

- Integrate projects into existing administrative structures.
- Assure that national government absorbs progressively larger portions of project costs over the life of the project and/or develops cost recovery mechanisms within the project.

- Include training components for both technical and administrative subjects.
- Avoid short-term projects and include significant technical assistance components.
- Design projects with visible benefits that are perceived as effective and that create demand for project services.
- Include community participation mechanisms in projects with cost-recovery.

GLOSSARY

ADB	African Development Bank
A.I.D.	Agency for International Development
ASC	Agents de la Sante Communautaire (Community Health Agents)
BISP	Bakel Irrigated Small Perimeters
CDIE	Center for Development Information and Evaluation
CIDR	Centre International du Developpement Rurale (International Center for Rural Development)
CILSS	Comite Permanent Inter-Etats de Lutte Contre la Secheresse dans le Sahel (Inter State Committee on Sahelian Drought)
CPFH	Center for Population and Family Health, Columbia University
CRS	Catholic Relief Services
DHPS	Direction d'Hygiene et de la Protection Sanitaire (Office of Hygiene and Health Protection)
ECPR	Executive Committee for Project Review
FED	Fund for Economic Development, European Economic Community
GOS	Government of the Republic of Senegal
HIID	Harvard Institute for International Development
IBRD	International Bank for Reconstruction and Development
ISTI	International Science and Technology Institute
MAS	Ministere des Affaires Sociales (Ministry of Social Affairs)
MCH	Maternal and Child Health
MDR	Ministere du Developpement Rural (Ministry of Rural Development)
MDS	Ministere du Developpement Social (Ministry of Social Development)
MOH	Ministry of Health (Ministere de la Sante Publique)
PCV	Peace Corp Volunteer
PHC	Primary Health Care
PIDAC	Projet Integre de Developpement Agricole de la Basse Casamance (Lower Casamance Integrated Agricultural Development Project)
PP	Project Paper
PSC	Personal Services Contractor
PSFP	Projet Sante Familiale et Population (Family Health and Population Project)
PVO	Private Voluntary Organization
RAT	Reforme Administrative Territoriale
RHO	Regional Health Officer
SAED	La Societe Nationale d'Amenagement et d'Exploitation des Terres du Delta du Fleuve Senegal (Society for the Management and

SLA	Exploitation of the Senegal River Delta) Service de la Lutte Antipaludique (Malaria Prevention Service)
SOMIVAC	Societe de la Mis en Valeur de la Casamance (Casamance Development Authority)
SSRHP	Sine Saloum Rural Health Project
TAI	Techniciens d'Assainissement Itinerant (Mobile Sanitation Technicians)
UNDP	United Nations Development Program
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VHW	Village Health Worker
WHO	World Health Organization

1. INTRODUCTION

This report is part of a series of sustainability studies implemented by the Center for Development Information and Evaluation of the Agency for International Development Program and Policy Coordination Division (CDIE). These country studies use a consistent comparative methodology to review health, nutrition, and water supply and sanitation population projects that the U.S. government supported to determine which projects were sustained and what factors (both of the country context and the project characteristics) were related to sustainability. The Senegal Study is one of three current studies in Africa (including also Tanzania and Zaire) and follows two completed studies in Central America (Honduras and Guatemala).

This study of sustainability in Senegal follows an established methodology that was developed and refined in the Central American cases. The methodology defines sustainability as the continuation of a significant portion of project activities and benefits at least 3 years after the termination of U.S. government funding. Sustained and unsustained projects were then reviewed for a series of context and project characteristics which were hypothesized to be related to sustainability. The list of variables reviewed is presented in Table 1. For a discussion of the methodology see Appendix A. A desk study defined the central projects and areas of investigation and was followed by a 2 week field visit by a team of evaluators in April 1989.

Table 1: Project Characteristics and Contextual Factors Affecting Sustainability

In Senegal we reviewed two major projects which were completed by the time of the field study--the Bakel Irrigated Small Perimeters Project and Casamance Integrated Rural Development Project. Both of these projects were rural development projects with significant health and/or nutrition components. We analyzed these projects as part of the broader effort to develop a body of knowledge on sustainability. We recognize the difficulty in extrapolating from this small sample size. However, the findings from this study ultimately will be interpreted within the context of other country studies.

We also reviewed two projects in the current portfolio--the Sine Saloum Rural Health Project and the Family Health Project--to discuss the prospects for their sustainability based on the historical cases and prior studies of sustainability.

2. USAID HEALTH PROJECTS IN SENEGAL

There were five major health projects funded by A.I.D. in Senegal. (see Figure 1). For one of the projects, Water Survey and Development (1965-1970), we were unable to find any information, either in Washington or Senegal. It appears to have been related more to irrigation than health.

Figure1: CHRONOGRAM USAID HEALTH SECTOR PROJECTS IN SENEGAL

The two projects which form the core of our sustainability study are the health and nutrition components of the Bakel and Casamance rural development projects. These projects were terminated at least three years before our study and thus provide evidence of sustainability. The Bakel rural development project (1977-1985) was an agricultural project to develop irrigated agriculture on the Senegal River at the far eastern region of Senegal bordering on Mali. A health component was added to this project by Washington in the final stages of project design and approval. This component involved two separate activities: (1) an epidemiological survey that was to monitor health effects of the irrigation project, and (2) a PHC sub-component which was to assist in the development of village level health services by training nurses, village health workers and sanitarians, and developing mechanisms for community participation and cost-recovery. (see Appendix D).

The Casamance Rural Development Project (1977-1985) was implemented in the southernmost region of the country. It was designed to improve agricultural production in one of the most promising agricultural regions. The health and nutrition component was designed to complement the agricultural activities by training Rural Development Agents in nutrition and health education. It also included training of Ministry of Health nurses in health and

nutrition education and assisted other PHC activities such as the creation of village pharmacies and mechanisms of community participation. The project initially suffered from institutional conflicts among the three different agencies responsible for implementation (Ministry of Health, Ministry of Social Affairs, and Ministry of Rural Development). It was redesigned in 1983 and was effectively implemented only for 22 months. (see Appendix C).

Although this report focuses on the completed projects, the team also reviewed two ongoing projects--the Sine Saloum Rural Health Services Development Project (1977-1990) and the Family Health Project (1979-1992)--to appraise the potential for sustainability of these projects. (See Appendices D and E for discussion of these projects.)

3. WHAT WAS SUSTAINED IN SENEGAL?

Sustainability was defined as the continuation of project activities and benefits at least three years after USAID funding had ceased. For comparative purposes, projects and project components were deemed to be sustained if at least one major project activity continued. In Senegal, unlike other sustainability studies in this series, we found it useful to distinguish degrees of sustainability among projects and project components. The three cases we examined represented a spectrum from fully sustained to unsustained.

Our review of the two completed projects suggests that one component of the Bakel project, the Epidemiological Survey Component, was unsustained and one, the Primary Health Services Component, was fully sustained. The health and nutrition component of the Casamance Project was only modestly sustained, according to the evidence available to the team.

The Epidemiological Survey Component of the Bakel Project was implemented by a team of researchers from the University of Dakar and did not take advantage of the local Ministry of Health nurses who had been trained to assist the project. It failed to provide significant epidemiological surveillance for determining the health impact of the irrigation project. Its findings were reviewed at a seminar late in the project's life and were not followed-up. There was no subsequent support for epidemiological surveillance in the region.

By contrast, the PHC component of the Bakel project was not only sustained, but subsequent activities by local communities and the Ministry of Health have further improved PHC services since the end of the project. This project trained Ministry of Health workers and village volunteers in 23 villages, and provided mopeds (or mopeds) for the Ministry of Health health workers. It also assisted in the development and construction of 23 self-supporting village health huts and provided them with basic drugs as an initial step

in establishing village-run revolving drug funds. Over the life of the project and beyond, villagers, taking advantage of additional resources provided by remittances sent home by migrant workers from the area, not only continued the community activities sponsored by the project but also upgraded the health huts to Health Posts and petitioned the Ministry of Health to provide nurses to staff them. The Ministry has responded by providing salaried nurses for each Post.

The Casamance Project was redesigned in 1983 to focus on health and nutrition education, chloroquine treatment for malaria, and parasite treatment. It also provided support for village pharmacies, similar to the revolving drug funds in the Bakel project. The project trained Ministry of Health nurses and Rural Development Agents to provide nutrition and health education. While it was difficult to evaluate systematically what was sustained in this project, the team was able to determine that several villages continued to enjoy the benefits of these programs. Village pharmacies still operated in some areas and the nurses and Agents were still reported to be providing health and nutrition education. However, it was also clear that in many villages these activities were no longer functioning. With this conflicting and partial evidence we concluded that this component was only moderately sustained.

The analysis that follows reviews the factors that were hypothesized to be related to sustainability. We test these hypotheses with our three project cases.

4. CONTEXTUAL FACTORS

We first examined the contextual factors that in earlier studies were hypothesized to be related to sustainability. These factors are in general beyond the control of project designers and managers, but could be taken into account in the design and implementation of projects (see Table 2). We briefly discuss these factors in this section.

For our cases, almost all of these factors were relatively constant and therefore usually did not discriminate among sustained and unsustained projects. However, this analysis will be useful for later comparison with other countries which have different contextual factors. It also suggests the difficulty of sustaining any project activity in the face of ongoing economic decline in an already resource-poor country.

4.1 Natural Disasters

Although drought has been a significant and repeated natural disaster in Senegal, especially since the long-term drought of 1968-1974, it was not clear that the drought itself affected the sustainability of USAID health projects. The long-term drought

preceded all USAID efforts in health, except the water and sanitation project. Subsequent shorter droughts have had a direct impact on the remaining projects.

The general effects of this disaster were several. First, it led to immediate and probably long-term malnutrition among infants, children, and mothers. Second, it shook the foundations of the rural economy, and, because of Senegal's heavy reliance on its groundnut crop, the overall economy of the nation. Thirdly, it commanded worldwide publicity and focused foreign donor attention on all of West Africa, including Senegal. Foreign assistance which in the past had been largely the province of the French, reflecting its colonial legacy, increased greatly and became more diversified in its origins and activities.

Part of the drought assistance was in the form of emergency aid, particularly food aid. But there was also heightened concern among the international community, both bilateral and international actors, for the long-term development options for the region. There was, at the same time, realization among donors of the need to coordinate assistance, both to avoid duplication of efforts and also to gain a better understanding of what constituted effective development efforts in this region of the world, new terrain for the majority of donors. One outgrowth of this crisis was the formation of the Club du Sahel among donors. Finally, some efforts were initiated among the Sahelian countries themselves to collectively assess and coordinate efforts, e.g., the Comité Permanent Inter-Etats de Lutte Contre la Sécheresse dans le Sahel (CILSS) .

Although we can identify a variety of forces put in motion in response to the droughts, we are not able to link impacts of the drought directly to sustained or unsustained project outputs or outcomes. It is likely that the drought manifested its greatest impact on health activities and outcomes indirectly through increased foreign assistance and reduced levels of domestic resources available to discretionary programs. In addition, the direction of health sector development may also have been influenced. A World Bank report states that the worsening economic situation after the 1968-1974 drought led to a marked deterioration of health services. The Government then readily endorsed the principles of primary health care drawn up at the Primary Health Care Conference held in Alma Ata in 1978 in order to improve health and nutrition status among the most vulnerable groups--mothers and children--particularly in peri-urban and outlying areas."

Table 2: Contextual Factors in Senegal

4.2 Political Factors

We examined four political factors that we expected might reduce the potential for sustained activities and benefits: 1) regime instability; 2) low state capacity; 3) low ideological commitment to the welfare of the poor and; 4) presence of strong interest groups opposed to redistribution of resources in the health sector or to project objectives.

4.2.1 Regime Instability

Regime instability provides a context of uncertainty which is likely to threaten the sustainability of all projects. However, since Senegal has been politically stable throughout the period of U.S. support, we are unable confidently to test this hypothesis. On the other hand, it might also be argued that we have witnessed little sustainability in spite of extremely stable regimes. This suggests that stable regimes, in and of themselves, may have little impact on sustainability.

Senegal has been a functioning democracy since independence and a strong advocate of democratic traditions. Since the initiation of U.S. funding in the water and sanitation sector in 1967, Senegal has experienced political stability under two regimes: the first post-independence tenure of Leopold Sedar Senghor, and the current regime of his hand-picked, though elected, successor, A.Wou Diouf.

It is only recently that opposition has been growing. Fifteen opposition parties were represented in the 1988 presidential elections, where the ruling party experienced their smallest margin of victory ever. Demonstrations and riots following the elections resulted in jailing of some members of the opposition for a brief period of time. Opposition leaders, several of whom were newly elected delegates, were found guilty of inciting riots, then pardoned and released.

4.2.2 State Capacity

At Independence, Senegal inherited a large public sector that had initially been developed to administer a large portion of French West Africa but was inappropriate for the much smaller nation that emerged from the independence process. Until the emergence of the financial crisis in the late 1970s, state employment continued to grow at a rate of 6 percent per year. The government bureaucracy accounted for a large portion of this employment; however, the state was extremely active in the economy as well. Large public enterprises dominated the economy. By 1980, the central government portion of the GNP had risen to over 23%.

Despite the large scale and dominant economic position of the state in Senegal, its general capacity was weak. The central

administrative structures were fragmented and poorly coordinated. Public enterprises were extremely inefficient. The state apparatus barely penetrated into the rural areas. The efforts to decentralize the administrative structure to the regional levels in 1972, along with the introduction of the Territorial Administrative Reform (RAT), weakened the central government but did not provide sufficient resources at the regional level for strong regional administrative structures to emerge.

As will be discussed below, efforts to resolve the economic crisis imposed an austerity program on the government which resulted in further weakening of the state capacity. Budgets were slashed, many social activities suspended, public enterprises were given a less dominant position in the economy as efforts to strengthen the private economy took precedence.

In general, the hypothesis that a strong state would be able to command more national resources and redistribute them to the poorer sector of the economy was not born out in Senegal. The state capacity for redistribution was weak. It was not able to redirect resources from the dominant urban based economic groups toward the poorer rural sectors. In the fact of an imposed austerity program, its capacities declined even more and resources that were once available for the health sector were reduced significantly.

4.2.3. Commitment to the Welfare of the Poor

There has been consistent ideological and rhetorical commitment to the welfare of the poor in Senegal. This support has been reflected in the willingness to enter into donor-assisted projects. Both Presidents Senghor and Diouf have been fervent supporters of health sector projects in general, and rural and peri-urban health services and immunization projects in particular.

Outside of verbal rhetoric, commitment to the seeface of the poor becomes more difficult to discern. The pattern of urban bias exhibited by Senegal at Independence, stemming mainly from the sharp differences between urban and rural areas, has not changed. Senegal ranks high in comparison with other African countries on unequal income distribution. Urban/rural income transfer has been a persistent issue in Senegal politics. Urban living standards have been traditionally maintained at the expense of the rural sector.

Decentralization was a political reform initiated in the seventies. Policies were devised, followed by legislation, that promote the decentralization of government authority to the local level. The 1972 Territorial Administrative Reform decentralized the civil administration, granted greater power to the regions, fostered the creation of regional and local participatory structures, and created a new peripheral administrative rung called

the "rural community" (IBRD, RHP, 1982 p. 5). This formal step has enabled local authorities to endorse, and financially support, local activities such as the Bakel and Sine Saloum rural health projects. Local authorities have had the ability to channel funds into programs, such as rural health services, that they deem to be priorities, although with some limitations as to the level at which they may fund them.

However, although the rural communities offer an institutional framework for extending the health system to the village level, they require supervisory linkages and logistical support at the regional level. These linkages have remained notoriously weak and have certainly affected the sustainability of rural health activities. The staff support provided to the Bakel/PHC component, which has been sustained, is an exception which provides support for the general conclusion.

In addition, there are still many policies and regulations that restrict the autonomy of regional and local level activities. In our limited site visits, we found that the local health authorities do not tell the Ministry of Health how much they have collected in fees, and they sometimes keep accounts in fictitious names, because they would receive less support from national sources and they would have to remit more to the national budget. Also, the sale of drugs is strictly regulated with different medical personnel being permitted to prescribe only certain medications. Even the sale of aspirin is technically forbidden in the market.

The private practice of medicine is very controlled. Until recently, the Ministry of Health was the sole employer of newly graduated physicians. New graduates were required by law to work for the Ministry of Health for ten years after completing their studies. Recently the government has been unable, due to austerity measures, to employ all new graduates. However, these graduates have difficulty obtaining licensure to operate a private practice in spite of the fact that there is both need for additional physicians, and a willingness of the public to pay for services.

4.2.4 Interest Group Pressures Opposing Redistribution in the Health Sector

Interest group pressures have been significant in both the Casamance and Bakel activities. The Casamance project experienced considerable politicization which significantly retarded launching of the health component. The major opposition party in the Casamance manipulated the situation to imply that PHC was of lower quality than that received in hospitals and clinics. Slogans such as "Primary Health Care = Poor Health Care" and "Government is letting illiterates be in charge of your health" were used to incite public opposition to PHC services. Moreover, the government was less interested in the social components of the Casamance

project (health and literacy) than the agricultural one, a more visible and productive sector.

Interest group pressures probably also retarded changes in policies and laws which would have facilitated effectiveness and sustainability. Some activities have been more effective without this opposition. Also, physicians have been able to pressure the government to increase their salaries and to direct the majority of health resources into physician-oriented hospital services, to the detriment of most projects supported by A.I.D.

4.3 U.S.- Senegal Bilateral Relations

Bilateral relations had been friendly for a long period predating Independence. They did not change during the period under review and therefore the impact of bilateral relations on sustainability could not be tested. The U.S. has a number of basic interests which the A.I.D. program helps to support in Senegal. These include maintenance of Senegal's functioning democracy, its leadership position in (West) Africa, its strategic importance, and humanitarian considerations. Senegal is a democracy which has maintained and staunchly defended its democratic traditions since Independence. In addition, Senegal maintains a leadership position in international affairs; its voice of reason and moderation is respected not only in the Third World but among the entire international community. Senegal has strategic importance for the West: its geographic position, shared with Brazil, as the closest link across the southern Atlantic is significant, as we witnessed during World War II and, more recently, during the Falkland Islands crisis. Also Senegal provided the primary alternative landing site for U.S. space shuttles if they do not reach orbit, until The Gambia recently took over this role.

It appears likely that the good bilateral relations and relatively consistent USAID health policies contributed somewhat to the development and effective implementation of the projects, although the lack of variability in this factor makes it difficult to test our hypothesis looking at Senegal alone.

4.4 Socio-Cultural Factors

Socio-cultural factors of importance to this study include ethnic conflict, rural-urban inequalities and gender inequalities. We expected that significant ethnic conflict would make both implementation and sustainability more difficult. Senegal is a multi-ethnic society, each segment of which speaks different languages or dialects although Wolof is the predominant "lingua franca". There are also significant populations of Mauritians, Middle Eastern groups and Europeans. Given this mix, Senegal's independence period has been remarkably free of major ethnic conflict, although recent events in both Mauritania and Senegal suggest that ethnic tensions, especially between Black and Moorish

populations, are just below the surface. The regions where A.I.D. projects have been implemented do not appear to have had significant ethnic tensions.

There are ethnic differences between the Bakel Region and the Casamance. The Bakel region is dominated by an ethnic group (Soninke) which is an independent and self-motivated group. Many male members migrate from the area to France for several years and are successful enough to remit substantial savings to the community. It appears that the PHC component of the Bakel project benefited from these advantages. On the other hand, caste divisions and practices of other minority ethnic groups inhibited project implementation. The Casamance region does not enjoy the advantages of this migration or selfmotivation. The Casamance project was only modestly sustained and perhaps suffered from the lack of migrant income and from the higher level of motivation in the Soninke tribe.

The variety of languages and the limited availability of schooling has had an impact on the level of education in rural areas, also a limiting factor for project implementation and sustainability. While urban education systems are fairly well developed and higher education is among the best in Francophone Africa, the system has failed to reach significant portions of the rural areas. There, more children attend Koranic schools than attend public schools. Low education not only limits the available human resources for health activities, but is shown to have an effect on fertility and the ability of mothers to accept health and nutrition innovations which may improve the status of their children. Consistent with the urban/rural differences, there is significant income inequality in Senegal.

Sexual inequalities are also strong in this male-dominated Muslim society which does not grant women significant independence or equality. This inequality has not only influenced the education and employment opportunities for women and their freedom to adopt contraceptive methods, but also has influenced the role of women as administrators of the projects themselves. Although these egalitarian factors were hypothesized to have a negative effect on sustainability, we were unable to test them in the Senegal case, since they were relatively constant for all projects.

The early post-independence "Senegalization" process which replaced colonial and other foreign dominated administrative structures with Senegalese officials and businesses does not seem to have affected the acceptance of foreign technical assistance. However, there has been some tension between French and other donors, as discussed below in the section on donor coordination, as the French influence is eclipsed by others in the international donor community.

There is one cultural factor which may have contributed to

sustainability in a positive fashion, although again we cannot test its impact because all projects would have benefitted. Within the village communities there is a strong tradition of equality, sharing, and cooperation. This communal tradition was taken as a basis for the development of a national system of cooperatives--following the African democratic socialist ideology of the post-colonial governments. This cooperative tradition has had an influence on the development of rural communities and on the community participation aspects of health projects.

4.5 Economic Factors

At Independence, Senegal had one of the most developed economies of Francophone Africa. Its economy was based on the production of primary products, principally peanuts, but it also had developed some local industries. The post-independence period brought an end to its protected French market for peanuts and other primary products, and it brought national protection for its fledgling import-substituting industries. These industries, however, were unable to utilize protection to develop to the point of being efficient, internationally competitive producers. Through the process of Senegalization, the state took a greater role in the economy in order to replace the foreign presence with nationals, both as officials and as sources of investment. The public and semi-public enterprises became increasingly inefficient as they provided expanded employment opportunities. A rapid decline in private investment also occurred as the government took over the major role in many economic areas.

A general process of economic decline that was accelerated during the long period of drought (1967-74) and subsequent shorter droughts continues. The economy is still dependent on agricultural production, primarily peanuts, which suffer price fluctuations but are in regular decline. The 1970s brought an ill advised rise in foreign borrowing that was not turned to successful production in non-traditional sectors. By 1984, the economic decline and the mounting debt forced the adoption of a severe austerity program which slashed budgets for national programs. The health sector suffered significant cuts in its proportion of GNP and the national government budgets. It has declined from 9 percent in 1971-2 to 2.3 percent today. To date, the austerity program has not demonstrated effectiveness in regenerating economic growth.

The A.I.D. projects under review concluded in this context of austerity budgets and declining economy and therefore we cannot directly test the impact of these economic factors on sustainability in Senegal. However, given the weakness of sustainability of any project activities and the unique external economic support that migrant workers provided in the one case of significant sustainability, we feel that comparative analysis will show how important this factor is in Africa. It is likely, in cases where economic resources are so limited, that economic decline and

imposed austerity pose major problems for government absorption of health projects. At the same time, these conditions also make it more difficult for governments to transfer health costs to increasingly poor recipients.

4.6 Private Sector

The private sector in Senegal has been limited in the post-independence period by the active role of the social-democratic state. Nevertheless, in the health sector there is a significant presence of private hospitals, physicians and pharmacies, located mainly in the urban centers. Private Voluntary Organizations (PVOs) have been active in some areas of the country and have made a significant contribution to primary health care in Senegal. Catholic Relief Services (CRS), as well as many church-related PVOs have been active for many years. Most of these programs are small, but some have demonstrated innovations that other programs have adopted. Since there was little private sector activity in the Bakel or Casamance regions, however, we could not discern any significant impact that the private sector might have had on sustainability of health projects in the A.I.D. portfolio.

4.7 Implementing Institutions

We hypothesized that strong institutions responsible for implementing A.I.D. projects are more likely to sustain these activities than are weak institutions. Usually, the basic institutional characteristics have to be accepted by project designers and implementors, so this characteristic is viewed as a context factor which the project is not likely to change but should be taken into account in project design and implementation. We examined five characteristics of the institutions that were expected to undermine sustainability: (1) rapid turnover and low quality of top officials; (2) centralization of decision making; (3) fragmentation of authority and responsibility; (4) low skill levels of personnel; and (5) conflicting organizational goals.

4.7.1 Turnover and Quality of Top Officials

During the past five years, there has been a rapid turnover of top officials in the Ministry of Health. The Minister has changed three times and other top officials have also been changed. However, prior to 1983, a dynamic Minister held office for several years. Many of the higher officials have been trained overseas, and are capable and highly skilled. However, leadership and management skills are not always present and some projects have suffered from lack of consistent top-level attention to implementation problems. The evidence available suggests that the high levels of turnover and low skill levels were not particularly conducive to sustainability.

4.7.2 Centralization of Decision-Making

We did find some evidence that decentralization may be related to sustainability. Each of the Ministries was relatively decentralized since the 1972 Territorial Administrative Reform which delegated authority to the regional level. This decentralization may indeed have encouraged sustainability of the projects since they were regionally targeted. The one institution that was not particularly decentralized--the University of Dakar--managed the one project component (Epidemiological Survey) that was not sustained. However, there was also evidence that regionalization posed significant barriers to project implementation, created regional jealousies, or delayed project initiation.

4.7.3 Fragmentation

Fragmentation of an institution results from the establishment of separate relatively vertical, programmatically-determined subunits. These subunits have little interaction or coordination and often have little communication or understanding of each other's activities. We hypothesized that such fragmentation was not conducive to sustainability.

Despite a reorganization in 1979 designed to improve coordination and decentralization of support functions within the MOH, the administrative structure remains highly fragmented. Even programs that are designed to be administered by a single unit have to face administrative and geographic divisions that inhibit implementation. The central Ministry is spread among a variety of offices in Dakar. Different directorates often share responsibility for a single program but do not communicate easily with each other. Lines of communication and authority are confused, and bureaucratic procedures for approvals are exceedingly complex.

4.7.4 Low Skill Levels

Although there are many highly skilled and capable health officials throughout the Ministry at all levels and in all regions, there is a major human resource constraint. Many officials are not technically prepared for their tasks. In many areas there are shortages of appropriate manpower. Incentives for skilled personnel are weak, especially in the more remote areas. Positions go unfilled for years. Despite major efforts to strengthen in-service training programs, many essential skills, especially those of administration and management, are still weak.

4.7.5 Conflicting Organizational Goals

We hypothesized that organizations with a variety of conflicting goals would not be conducive to sustaining USAID projects, especially if those organizational goals conflict with

the objectives of the USAID projects.

The Ministry of Health, like most health ministries in developing countries, is responsible for both curative and preventive care, and tertiary as well as primary care. Its budget, as well as its physical and human resource distribution has favored goals other than those supported by A.I.D. projects, with urban-based curative care gaining by far the largest share of resources. In this context primary care activities for rural areas are disadvantaged.

4.8 Donor Coordination

In the early post-independence period, France was the major donor in Senegal. In recent years this role has been eclipsed by a variety of donors including USAID which began providing support in the mid 1960s, with major efforts in health and in population beginning in 1977. The World Bank, UNICEF, and several other bilateral donors have also significantly increased their contributions to Senegal in recent years.

Senegal has yet to develop the institutional capability to coordinate and plan donor activities. There is little evidence that the international donors have coordinated their activities among themselves, except perhaps in the family planning area, where UNFPA and A.I.D. have promoted similar aims. There has been absorption by the USAID Rural Health Project of several donor projects in the Sine Saloum area, but as this project has not yet terminated, we are unable to determine the effects of this absorption on sustainability. A UNICEF sponsored mass vaccination campaign in 1987 appears to have undermined some aspects of USAID project implementation by drawing resources away from routine activities. It was said that this campaign consumed "five years of funding in six months," while all other institutionalized child health programs were put in abeyance. However, again, it is not clear what, if any, impact this might have on sustainability.

4.9 National Commitment

National commitment is defined as the consensus among important decision-makers and interest groups in the Senegalese health sector that the goals and objectives of a project are a national priority. Alternatively, the presence of major conflict among decision-makers or interest groups over the goals and objectives of the project is taken as evidence of a lack of national commitment. This issue is distinct from the question of whether or not the government applied national funds to support these objectives--an issue we treat in our analysis of the financing of projects.

There has been consistent high level rhetorical support for the health sector and for primary care in particular. Both

Presidents Senghor and Diouf have made significant public statements in favor of primary health care since the Alma Ata conference. The present government gave strong support to the objectives of child survival by backing the UNICEF-sponsored mass immunization campaign. President Diouf has also publicly endorsed the objectives of family planning.

Nevertheless, there is little momentum behind the public statements. Unlike other countries where national commitment has been transformed into a major enthusiastic effort by health professionals to overcome the curative and urban dominance of their systems, no such mobilization--beyond the short-term support for the ill-advised mass campaign--has occurred. Furthermore, the central goals of primary health care have not gained full acceptance in the relevant political community. Political campaigns have charged that "primary health care is poor health care," suggesting not only a lack of consensus but also active opposition. While family planning has not generated the kinds of opposition that emerged in other countries, it nevertheless has not gained full support as a national priority. While a national commission has been formed, no national strategy has emerged to solidify the consensus and to mobilize for family planning as a national priority.

Again, since this low level of commitment was constant throughout the period under review, we were not able to test its impact on sustainability.

5. PROJECT CHARACTERISTICS

We look next at project characteristics that in earlier studies were hypothesized to be related to sustainability. In contrast to the contextual factors, which are typically not manipulable within a given project, project factors can be altered and controlled by project designers and managers with much greater latitude. Since these factors are more controllable, the lessons from this section should have specific application in judgments on project design and in evaluation of ongoing projects (see Table 3).

Table 3: Project Characteristics in Senegal

5.1 Project Negotiation

We hypothesized that projects designed through a process of mutually respectful negotiation between A.I.D. and the government of Senegal would be more likely to develop a consensus over goals, objectives and implementation plans. We expected that projects that were more or less imposed by foreigners would be least likely to be sustained after donor funding ceased. Imposed projects are not likely to have national support at the beginning of the project and may generate nationalistic resistance throughout the project, although to the extent that the project coincides closely with national development goals, and progresses toward the achievement of those goals, support may be generated later. Furthermore, projects that involve implementors in their design phases tend to be better matched to local conditions.

In their initial stages, neither the health and epidemiological components of the Bakel Irrigated Small Perimeters nor the Casamance Rural Health Project were designed with the participation of the Senegalese. In fact, the Bakel project represents a classic example of the imposition of a project component by A.I.D./Washington, with little support from the mission office in Dakar.

The implementation of the Casamance rural health and nutrition education component was delayed for several years, in part due to refusal of participation by the Chief Medical Officer of the region who was not involved in initial negotiations. The project underwent a mid-course redesign, in which the Senegalese identified community needs and negotiated project implementation; as a result, activities were better identified as local priorities, and the primary health care component in particular achieved some small measure of continuity after the project completion date.

It is not clear that those projects that were negotiated in a process of mutual respect and consensus tended to be sustained. The Casamance project, renegotiated in this process, was only sustained on a limited basis. The Bakel epidemiological survey was negotiated with its implementor within the context of the component having been externally imposed, and was not sustained. The Bakel PHC component was an exception in this set of projects, as the majority of project activities were sustained after funding ceased, despite the lack of consensus in the negotiation process.

We conclude that our cases did not provide clear support for the hypothesis that participation and mutual support and consensus contributes to the sustainability of health and related projects.

5.2 Institutional and Managerial Characteristics

Three central aspects of the institutional structure of projects were identified as likely to be important for the

sustainability of project activities and benefits: (1) integration of the administrative system (horizontal vs. vertical); (2) managerial leadership; and (3) administrative systems and training.

5.2.1 Integration of Administrative Systems

Projects are vertically organized if their administrative hierarchy is separate from the usual national implementing agency, or forms an autonomous unit within the existing structure, and if this administrative structure has its own narrowly defined goals and objectives. Autonomy exists if there is no clear chain of authority which involves required communication and coordination between project administration and various units and levels of the normal administrative structure.

A second aspect of vertical programs is that they tend also to be privileged, in that staff often receive project-related salary subsidies and more materials than equivalent services in the national agencies.

In contrast, horizontally integrated management structures dovetail with the existing administrative structure of the implementing institution. This serves to draw upon and foster the existing expertise in substantive areas, avoid duplication of effort, enhance communication among relevant agencies and offices, and encourage the full integration of project activities into sectoral plans and priorities. Staff members would be less likely to receive special supplements, and would identify project management as part of their normal routine, and not as some task falling outside the realm of their usual responsibilities.

When considering the sustainability of health projects, it was hypothesized that those projects which were horizontally integrated into the administrative structures of the implementing institution were more likely to be sustained after the termination of external funding.

The less sustained of the Bakel project components--the Epidemiological Survey--was implemented as a vertical program. It was carried out by the Chief of the Department of Parasitology and Pharmacology at the University of Dakar and head of the Anti-Malarial Service affiliated with the Ministry of Public Health. The project was run as an independent research endeavor, however, and was never successfully incorporated into the goals of either organization.

On the other hand the moderately sustained Casamance Project and the fully sustained PHC component of the Bakel project were administered by a bewildering combination of bureaucratic units that do not neatly fit our categories. The projects required coordination among different Ministries and different regional administrative units and were only partially integrated into the

Ministry of Health administrative structure at the lowest levels.

The primary health care services segment of the Bakel project was overseen by the Society for the Management and Exploitation of the Senegal River Delta (SAED), an agricultural extension service with no expertise or interest in health. The project was administratively placed under the regional Prefect, and technically under the Chief Medical Officer of the Department. With so many competing factions, the project was not integrated into any one institution, although over time the Chief Medical Officer and the Ministry of Public Health assumed increasing responsibility for project coordination and implementation. The eventual adoption of the Bakel PHC component by the Ministry of Public Health and its integration at the periphery of the health system may have contributed to the successful continuity of project activities.

Similarly, responsibility for implementation of the Casamance health and nutrition components was initially shared by three government ministries; Public Health, Social Affairs, and Rural Development. Daily operations were to be undertaken by the literacy unit of the Ministry of Rural Development in conjunction with the Ministry of Public Health. Interministerial rivalries impeded carrying out project activities efficiently. Nevertheless, by the end of the project nurses and Rural Development Agents who were trained in nutrition and health education were fully integrated workers in their respective agencies--the Ministry of Health and the Ministry of Rural Development. The pharmacies appear to be supplied by the Ministry of Health system.

Our findings suggest that the vertical program was least sustained and that those projects that achieve some degree of integration into one implementing institution--in these cases at the periphery of the system--were more sustained.

5.2.2 Administrative Leadership

Managerial leadership is often crucial to the success of projects. In many countries there are examples of determined and qualified individuals succeeding in creating and managing effective projects in the face of considerable adversity. We expected that projects which had stable and qualified project leadership--both A.I.D. staff and Senegalese counterparts--would be more likely to be sustained than projects with rotating or incapable leadership. This hypothesis regarding leadership qualifications was not supported by our cases.

Despite the fact that leadership was stable in both the redesigned Casamance health and nutrition project and the Bakel epidemiological components, only the Casamance project was judged to have been partially sustained. The Bakel epidemiological component was directed by a well-qualified academic, and yet was unsustained. By contrast the Bakel PHC component was administered

by a series of ill-qualified individuals and yet was able to continue activities past the project completion date.

5.2.3 Administrative Systems and Training

If institutional constraints limit the effectiveness and sustainability of projects, we might expect that projects which improved the administrative systems of implementing agencies and which provided administrative training would themselves be more sustained than were projects which did not provide for such institution building. Institution building was undertaken as part of the Casamance project and the Bakel PHC component included training in local level administration. That is, village committees responsible for the management of health huts did receive some instruction in setting financial guidelines, in drug supply maintenance, and staff reimbursement. Administration was improved within the communities. On the other hand, there was no administrative training in the Epidemiological Survey component of the Bakel project. We concluded that the Senegal cases support the hypothesis that administrative training appears positively related to sustainability.

5.3 Financing

We considered four separate financing aspects of projects that might have an impact on sustainability: (a) progressive absorption of project costs by the national government budget; (b) recurrent demand for foreign exchange; (c) trade-offs among government priorities; and (d) cost recovery.

5.3.1 National Absorption of Project Costs

It is often expected that projects that achieve a progressive absorption of recurrent project costs into the national budget are more likely to be sustained than those projects which are externally funded at high levels throughout the life of the project. Unless the country has had time to include in its budget successively larger portions of recurrent costs it will be less likely to be able to provide funding for project activities when the external funding is terminated. In contrast national budget line items, especially for personnel, are seldom eliminated from year to year, making it difficult to dismantle projects which have established budgetary commitment.

In only one case, the Bakel primary health care component, was there national absorption of project costs. The Ministry of Health responded to local demand for state nurses as health huts were upgraded to health posts, and has continued to deploy staff and absorb related salary costs in the project villages. On the other hand, in the Casamance case the government supported continuing technical assistance for several years after the project terminated and continued to provide salaries of the nurses and Rural

Development Agents (the majority of whom were already employed before the project began). It appears also that the effectively sustained village pharmacies were supported by cost recovery mechanisms. The Epidemiological Survey was not supported by national funding.

These findings support the hypothesis that national absorption of funding contributes to sustainability.

5.3.2 Foreign Exchange Demand

Demand for foreign exchange is usually a particularly severe financial constraint on national budgets. The scarcity of foreign exchange often forces governments to choose priorities for importing products, especially in the public sector, and to impose import limitations on the private sector. We expected, therefore, that projects which impose a long-term recurrent demand for large amounts of foreign exchange would be less likely to be sustained.

We concluded that this attribute was not relevant for Senegal, as none of the projects in question required large expenditures of foreign exchange. While some drugs and equipment were imported from the United States as a stipulation of the project agreements, the overall demands were not large, and substitutions for the imported goods could be found locally or imported through other channels (e.g., drugs could be obtained from the national pharmaceutical distribution center).¹

5.3.3 Trade-offs Among Government Priorities

Because of central budget resources, national funding of new project activities may require a shift of resources. If a project requires a significant shift of resources from already established programs, it is hypothesized to be less likely to be sustained than similar projects which do not require significant tradeoffs.

In Senegal, as in many other countries, the balance between resources allocated to curative, hospital-based health care and those available to preventative, community based services may have affected project sustainability. While there is an apparent political commitment to the provision of low-cost care at the local level, this commitment is not substantiated with the obligation of sufficient resources to meet proven demand. The Ministry of Public Health was willing to assign nurses to the Bakel region, and to maintain the salary of one staff member, the Technical Assistant, of the Casamance nutrition and health care project, but there were no efforts made to expand upon the activities tested in these two

¹Senegal has the advantage that its currency, the CFA, is directly convertible to French francs, making it more favored on international markets than many other national currencies.

projects.

Also, research appears to be accorded much less importance than service delivery. The epidemiological research carried out in Bakel was clearly deemed a low priority within the Ministry and the University. Not only was funding not available to continue research in Bakel department, but it was not considered useful to undertake similar research in other parts of the river basin.

None of these projects required major shifts in government resources to be maintained. However, both sustained and unsustained projects required little trade-off, suggesting that this factor is not sufficient for sustainability.

5.3.4 Cost Recovery

Current A.I.D. policy considers cost-recovery within a project as likely to enhance that project's sustainability. To examine this assumption we hypothesized that projects which were able to recover a portion of project costs would be more likely to be sustained than those which recovered little or no costs. Our study supports this conclusion.

Both primary health care projects included some cost recovery mechanisms--mainly through drug revolving funds and fees for some services; both also were sustained for some period following the termination of external funding. On the other hand, the project component without cost recovery, the Bakel epidemiological survey, was not sustained.

It appears from this review of financing factors that those projects which make the least demand on strained national budgets and which can recover costs at the local level are more likely to be sustained than projects which require greater inputs from the national budget and have no cost recovery mechanisms. Trade-offs among government priorities will continue to affect project sustainability as long as projects are not consistent with national funding priorities.

5.4 Project Content

The project content is discussed in terms of the following four factors: (1) project design; (2) presence of a training component and continued employment prospects; (3) technical assistance; and (4) appropriate technology.

5.4.1 Project Design

Several specific facets of project design might have a bearing on sustainability. We considered: (1) the clarity of goals and objectives; (2) the length of the implementation period; (3) the size of the project budget; (4) whether the project creates a

demand for services; and, (5) whether the project has ethnic and gender balance.

a. Clarity of goals and objectives

Projects with clearly defined goals were hypothesized to be likely to be sustained. It was expected that clearly defined goals would contribute to more effective implementation, as roles of individuals would be specified, outputs and outcomes identified and quantified, and timetables for accomplishment of project goals established.

This aspect of project design did not distinguish between sustained and unsustained projects. While the Bakel epidemiological survey was a comparatively well defined activity (although lacking adequate timetables), it was not sustained. The primary health care component included targets for numbers of health huts to be constructed, personnel to be trained, and goals consistent with national priorities, and was sustained. Nonetheless, the project outputs were often not met, were modified, or were discarded altogether, and the project was an administrative tangle for its first few years of operation. Similarly, the Casamance health and nutrition components lacked clear objectives in its initial design, and the clarification of purpose was delayed several years until the project redesign.

b. Length of implementation period

This aspect of project design was expected to support sustainability as projects that are designed for relatively longer periods might be more likely to gain support among beneficiaries and the institutions charged with their implementation. Long project life could bring a more enduring impact, an institutional interest in maintaining established routines, and greater institutional capacity, all of which could be expected to promote sustainability.

There is limited support for this hypothesis. The health and nutrition component of the Casamance project was delayed in implementation, and thus was in operation for only 22 months. In contrast, the Bakel project was originally planned to be a five year project, but was extended to eventually function for more than 8 years. The communities were able to adapt to and invest in the latter project, while they were barely introduced to the former when it ended. The Ministry of Public Health also had grown accustomed to the need to regularly assign new staff to the upgraded health huts in Bakel, whereas the personnel demands from the Casamance project in the Casamance region were never routinized. While the epidemiological survey was extended as part of the larger Bakel project, in fact little field work was carried out during the last years of the project, and only one conference was held to publicize the research findings (the conference in fact

having been delayed from an earlier stage of the project).

c. Size of project budget

We expected that projects with small budgets would impose fewer requirements for national absorption of project costs and therefore be more sustained. There was little clear support for this hypothesis. The Bakel primary health care project, with a budget of less than \$300,000, was the sole project to be unconditionally sustained; however, the Bakel epidemiological study also had a budget of about the same magnitude, and it was not sustained. The budget for the health and nutrition component of the Casamance project was approximately \$860,000, to be expended over a much shorter time period, and yet the project was marginally sustained.

d. Project creates a demand for services

Projects designed to produce visible and desired benefits and generate demand for services from beneficiaries (or providers) were expected to be more often sustained than those not creating demand. This hypothesis appears to be borne out by the projects reported here. Certainly the Bakel primary health care, and to a lesser extent, the Casamance primary health care projects produced visible benefits and generated continued demand among their constituents. The sole demand for the outputs of the epidemiological survey was exercised by the project director.

e. Project has ethnic and gender balance

It is hypothesized that projects which offer balanced opportunities to both men and women and to all relevant ethnic groups are more likely to be sustained than those which foster inequalities among the target population. All projects surveyed here strove to achieve ethnic and gender balances, and thus this factor does not distinguish among sustained and unsustained projects. It should be added that the projects may have met with less local resistance had more attention been paid to sociological and ethnographic research done prior to project implementation, in order to be more familiar with norms and mores of the local ethnic groups, some of which were challenged by project personnel or activities.

5.4.2 Training

Technical training of project personnel was included in several of the projects. It was expected that the benefits of training activities would be more likely to be sustained than other aspects of a project, particularly if the personnel trained in the project had enhanced prospects of finding salaried positions at the end of their training, both within the project and in related occupations.

The Bakel project has several training components, which achieved different levels of success in their implementation. Nurses were trained in microscopic techniques as part of the epidemiological study, with the expectation that they would carry out the laboratory analysis of blood and stool samples, and then continue such analyses as part of their regular clinic routine. In fact, the analysis was carried out by technicians at the University of Dakar, and the nurses were unable to exercise their training.

In contrast, for both the PHC component of the Bakel project and the Casamance project, nurses were also trained as trainers of village health workers, and successfully carried out lower-level training programs throughout the term of the project as new VHWS were recruited. The village health workers themselves responded well to the training, and believed their skills, capabilities and status were enhanced by their education. They have continued to carry out their work, and receive remuneration from the village management committees. The hypothesis that appropriate training with good prospects that trainees will be able to utilize the training in their work enhances the likelihood of sustained project activities appears to be borne out by these projects.

5.4.3 Technical Assistance

Projects in which technical assistance teams successfully established Senegalese counterpart capacity would have developed, enhanced and established the human resources necessary to maintain project activities. Three aspects of technical assistance were expected to contribute to the success of establishing counterpart capacity: a) counterparts well trained by technical assistance; b) project has large technical assistance team; and c) project has long term technical assistance (or intermittent short-term technical assistance over a long period).

a. Counterparts well trained

There is no evidence by which to assess the quality of training received by local counterparts. To the extent that Senegalese have carried out the tasks for which they were trained, and in the case of the Bakel primary health care component, carried out additional training themselves, one might assume that the training was successful, but such an assumption is not based on testing or on-site monitoring of project activities.

b. Large technical assistance team

None of the projects reviewed here received technical assistance from large teams, so the hypothesis that large technical assistance teams offer more opportunity for in-depth, specialized training, develops local expertise, and thus contributes to project sustainability, cannot be tested.

c. Long term technical assistance

It is hypothesized that long term technical assistance (or periodic interventions over a long period) also offers a greater possibility for counterpart training in technical and administrative issues. The hypothesis receives some support in Senegal. The redesigned Casamance components benefitted from the assignment of a long-term advisor by A.I.D., who was able to work closely with a Ministry of Public Health Technical Advisor and the local village communities to introduce and implement the project.

The Bakel epidemiological study received virtually no technical assistance of any sort; it was not sustained. The Bakel primary health care project included several years of long term technical assistance, mainly in community sensitization and organization; the project has been sustained.

5.4.4 Appropriate Technology

Under the rubric of appropriate technology, one must consider both the appropriateness of the technology within the context of a particular country or subculture within the country, and the unbiased professional assessment of the suitability or appropriateness of a given technology to address a specific need. Examples of the former may be the introduction of a latrine which is low cost, sturdy, and easy to construct, but which violates local norms regarding sharing sanitation facilities by different family members. Examples of the latter may include different contraceptive technologies, or methods of health service delivery. In most cases the Senegal projects utilized appropriate technology that has been effective in similar contexts. The failure to utilize nurses trained in microscopy in favor of university staff, perhaps weakened the Epidemiological Survey component of the Bakel project. However, there is little evidence to support or reject this hypothesis.

5.5 Type of Project

Previous studies had noted a tendency for three types of projects to be continued after A.I.D. funding ceased--health services, water and sanitation, and malaria, while others--family planning and nutrition projects--are less likely to be sustained. Throughout this analysis, we have tried to analyze all types in terms of their other project characteristics. However, we expected that there may some specific characteristic, distinct from the other project characteristics we have identified, that might be the decisive factor in determining sustainability.

This tendency is evident also in Senegal, where the two primary health care components were sustained in varying degrees, while the epidemiological and nutrition components were not. However, there was not a sufficient array of projects available for

analysis in Senegal to accurately test this hypothesis. No water and sanitation or malaria projects were examined, and an earlier family planning project is still being carried out in a greatly elaborated project design.

5.6 Community Participation

Two aspects of community participation are considered to compose this factor: a) the project stimulated community participation; and b) the project responds to community requests.

We expected that projects which successfully promoted significant levels of community participation and responded to community-defined demands would be more likely to be sustained. An assumption of this hypothesis is that community demands are considered in decisions to continue project activities. In addition, projects which engage meaningful community participation might be more effectively implemented and more likely to generate benefits.

5.6.1 Project stimulated community participation

The Bakel primary health care component was a community based project which relied wholly on community participation for its implementation. While Ministry of Public Health nurses were made available to staff the upgraded health posts, the newly-established health huts were managed by village committees and financed by community purchase of drugs and medications. Once appropriate procedures and policies were developed and formalized with some technical guidance, the communities assumed full responsibility for maintenance of the health huts, drug supplies, and payment of VHWS and midwives. The Casamance project enjoyed the participation of local communities in both the health and literacy aspects of the project. The epidemiological survey, on the other hand, was only partially successful in generating community support; some ethnic groups in the communities resisted participation.

5.6.2 Responds to community requests

The Bakel primary health care component, by accident or design, met a very real need for local health care. The Bakel department is geographically and communicatively isolated, yet extensive labor migration to Europe has raised awareness and expectations among local residents. The community has worked to continue the activities of the project, and has played a major role in its sustained functioning. We concluded that community participation was related to sustainability. Its relationship appears to strengthen local cost-recovery efforts.

5.7 Project Effectiveness

Effective projects were defined as those with a reputation for

achieving expected goals and objectives with a relatively efficient use of resources. It was expected that such projects would be more sustained than projects which were deemed to be ineffective. The Bakel primary health care component was viewed as effective by its constituents and by its implementors within the Ministry of Public Health. The epidemiological component was not effective in that it only partially achieved its goals, and it did not generate a reputation that would ensure its continued funding once external finances ceased. We concluded that positive perceptions of project effectiveness appear to have been conducive to sustainability among the projects considered.

6. SUMMARY OF FINDINGS

The Bakel project's two components and the Casamance project suggest the importance of several factors for sustainability. We summarize here the major findings.

6.1 Context Factors

As we found in other studies, we were unable to test most of our hypotheses for contextual factors because they varied so little and did not discriminate between sustained and unsustained projects. However, in light of the fact that so little was actually sustained in Senegal, our analysis suggests that several factors may contribute to an environment that is not particularly conducive to sustainability. Future comparative analysis among countries with different contextual factors may confirm what these observations suggest.

Political factors seem to be particularly weak for sustainability. Only the relative regime stability seems conducive to sustainability. Other factors which might have enhanced sustainability were not particularly strong: both state capacity and commitment to social welfare are weak.

Economic problems, exacerbated by long and recurring drought, also appear to have provided a particularly poor environment for sustainability. The austerity program imposed on the government by the economic crisis has limited its capacity to take responsibility for funding activities after foreign funding stops. A declining economy also restricts the ability of beneficiaries to provide cost-recovery funding.

Consistent with findings in the Central American countries, most institutional factors appear not to have been conducive to sustainability. The ministries responsible for implementing projects were fragmented, unstable and did not have suitably skilled officials. Decentralization, however, may have contributed to the effectiveness of the two projects that were sustained--although decentralization inhibited the initial stages of project implementation.

Finally, there appears to have been only moderate national commitment to the goals of PHC (and also family planning) since there was no clear consensus and considerable conflict generated by the objectives of the projects examined here. Other studies (Guatemala and Honduras) have found national commitment particularly important for sustainability.

6.2 Project Characteristics

The Senegal projects support findings in other countries for the importance for sustainability of several project characteristics. We found that vertical project administration was not conducive to sustainability and that some form of integration, at least on the periphery of the administrative system, was related to sustainability. Projects with management and administrative training were also more likely to be sustained. In the financing area, we found that national absorption of project costs and cost-recovery were related to sustainability. Projects which provided significant training activities, and those with long-term technical assistance were also more likely to be sustained. In addition, the sustained projects tended to create a demand for services and were viewed by participants as being effective in achieving goals and objectives.

We also found several characteristics related to sustainability in Senegal which were unrelated to sustainability in other countries. Community participation appears to have been important for sustainability in the PHC projects. This dimension may have been important also for cost-recovery elements of the projects. We also found some support for longer projects being more sustainable than shorter projects.

One factor that was consistently important in other studies but was not related to sustainability in Senegal was project negotiation. Unlike other countries, sustainability appears to have been achieved despite the lack of Senegalese participation and mutually respectful negotiation in the development of the Bakel project.

7. POLICY CONCLUSIONS

We recognize the risk inherent in extrapolating from these few cases to provide guidance. Nevertheless, the findings from this study are confirmed by other studies, a number of policy suggestions seem useful.

Senegal, like the other African countries in this series, exhibits a context of weak governmental institutions, and weak and declining economic conditions - which suggests that sustainability of any health projects will be difficult without continued and significant foreign assistance.

While there are various means of attempting to assure the continuation of project activities even in this difficult context - as our review of project characteristics shows - nevertheless, given the low levels of sustainability that have been achieved by past projects, it seems appropriate here to reiterate the widely held view of development experts that African countries will need continuing large-scale foreign assistance for the foreseeable future.

It is also important to underline the importance of improved institutions and a strong economy as key conditions for improving sustainability. The institutions that will be responsible for maintaining public health activities will have to be strengthened over the long-term. While private sector alternatives and cost recovery mechanisms are desirable components of any long term policy, the development of appropriate, flexible and authoritative public institutions are necessary for implementing the kinds of health services that address key health problems in Africa.

Economic development also requires significant long-term support so that not only the public sector gains revenues to distribute through its health care delivery system, but also so that the broader population can afford to pay for services through cost-recovery mechanisms - both for public and for private services.

In addition, while it is difficult to promote national commitment to primary health care, long-term efforts to transform rhetorical commitment to a broadly-based agreement to place primary health care at a high level of importance should be made. This is not only a matter of shifting budgetary priorities from hospitals, but also making appropriate choices about human resources, institutional structures, and personnel incentives.

To address contextual issues which so constrain sustainability of health projects, donors should commit to long-term support for institutional and economic development and should support efforts to build a wide consensus on the priority of primary health care.

Even in this difficult context, there are several lessons for project development and implementation that this study suggests would enhance sustainability.

- Projects should be integrated into ongoing administrative structures--vertical projects should be avoided.
- Projects should be designed to assure increasing government absorption of project costs over the life of the project and/or develop cost recovery mechanisms.
- Training components--including management and administrative training--should be included in projects.

- Projects should be designed for long time periods and long-term technical assistance should accompany project implementation.
- Projects should be designed to create a demand for services and be perceived by participants as effectively achieving project goals.
- Community participation should be a component of projects that have cost-recovery mechanisms.

APPENDIX A

1. METHODOLOGY

The methodology for this study was a modification of the methodology developed for the two Central American cases (Honduras and Guatemala) in the CDIE series. The objective of this series has been to provide a comparative analytical framework so that sustainability could be systematically examined in a variety of contexts and over a long historical period, to test the relationship between sustainability and a variety of factors that were hypothesized to have an influence on sustainability.

Since this series is one of the first to address the issue of sustainability, it was necessarily an exploratory effort from the beginning and it envisioned adaptation and evolution of the methodology in order to accommodate both the growing knowledge base about sustainability and the different conditions that each country study would find. In addition, different teams of professionals, with different backgrounds, were used in each country -- bringing varied perspectives, insights and interpretations to bear on the evolving methodology. Nevertheless, a core methodology has guided all of the efforts in this series.

The first question to be asked is: how do we know if a project is sustained? What is it that we expect to be sustained? Ideally, we would like to see the health benefits, such as reductions in specific diseases or general improvements in health levels, that the project produces to be sustained after the life of the project. If the project activities can continue to produce future benefits, then we would like to see these activities also continue. In only a few cases -- such as the eradication of small pox -- are health benefits achieved that do not require continuing activities for benefits to spread to subsequent generations.

However, it is difficult to determine what health benefits were achieved by most health care delivery activities. Most of the projects A.I.D. supports do not in themselves produce readily measurable health benefits, except in rare cases of experimental field studies. The work of an auxiliary nurse may affect the health levels of her community, but current statistics are not likely to demonstrate that impact. In most cases, we have to assume that the activities of a project produce expected health benefits and that continuing the activities of the project would continue the benefits and thereby in some sense sustain the project. Nevertheless, there have been clear cases where project activities were notably not producing any benefits -- for instance construction of latrines that were not used.

For the five country studies, the framework for analysis was a systems analysis which identified a central system around each A.I.D. project. The analysis examined: 1) the conditions in the health sector before the project began; 2) the goals and objectives

of the project; 3) the inputs in funds, materials and technical assistance provided by the project; 4) concurrent activities by the national government and other international donors; 5) the implementation process of the A.I.D. project; 6) project outputs in terms of human resources, physical constructions, and institution building; 7) project outcomes: the health benefits gained by the national population; 8) the status of outputs and outcomes at least 3 years after the project terminated; and 9) longer-term and unintended consequences of the project.

Projects (or project components) were considered to be sustained if project activities and benefits continued at least three years after the life of the project. Project outputs include the trained personnel, such as non-professional village level health workers or professional sanitary engineers; the physical infrastructure, such as hospitals and water systems; and the institutional systems, such as training schools, malaria and water and sanitation agencies, created during the project. Benefits (project outcomes) are the intended or unintended positive impacts of the activities for the health of the national populations. In most cases actual project benefits could not be determined; therefore, we expected that continuing activities were likely to have produced continuing benefits unless there was reason to believe that conditions which might influence the effectiveness of those activities had changed.

We examined both immediate outputs, those activities like water systems or trained personnel which were created during the life of the project and were likely to produce immediate benefits; and replicating outputs, the institutions which reproduce the immediate outputs, such as construction agencies and training schools.

For each project (or project component), we determined whether the project outputs were continuing after the life of the project and then identified the sources of funding for those outputs. Continuing projects which were funded by national sources (private or public) after the U.S. funding ceased were clearly sustained. However, for some projects, replicating outputs were sustained by other foreign donors. While this source is less desirable since international support can be withdrawn, projects were still considered sustained if the recipient nation appeared likely to continue to receive such support in the future.

It should be noted that our definition of sustainability does not address the issue of a more diffuse influence that projects may have had. Some projects may provide ideas or lessons that influence the design of future projects or influence national policy even though the activities that had been implemented during the life of the project did not themselves continue after the funding stopped. We felt that such diffuse influence would be hard to examine systematically.

After identifying which project outputs were relatively more sustained we compared the characteristics of these projects and their contexts to those project outputs which were relatively unsustained. These comparisons were made with regard to contextual factors and project characteristics which, based on previous studies and on the team's observations, were hypothesized to have an effect on project sustainability.

2. HYPOTHESES FOR INDEPENDENT VARIABLES

2.1 Contextual Factors and Project Characteristics Affecting Sustainability

In the following section we will discuss each of the factors and present specific hypotheses examined in the CDIE series of studies.

2.2 Contextual Factors

Several characteristics of the context in which projects are implemented may affect the sustainability of the project after the end of the project. The factors are not subject to the control of project designers or project managers but rather are factors which should be taken into account in project design and implementation. When faced with contextual factors which are likely to undermine the sustainability of a project, project designers and managers should modify projects so as to reduce the effect of these conditions on the project or should consider the implications of designing and implementing a project which is not likely to be sustained. Some projects may be more influenced by these contextual factors than other projects. These characteristics may change over time within a nation and they may form a basis for comparison with other countries.

2.2.1 Natural Disasters

We hypothesized that natural disasters would have inhibiting effects on the continuation of project activities and benefits. The logic underlying this hypothesis was that disasters would divert both attention and resources from normal development activities. Most natural disasters tend to require immediate, urgent assistance to provide food, water and shelter, prevent disease outbreaks, or administer urgent medical care. At a minimum the effect might be to interrupt or dilute the activities; in extreme cases they may force the cancellation of activities which might not be reinitiated at a later time. This is particularly true of health, nutrition, and water resource development projects.

2.2.2 Political Regime

Characteristics of political regimes which may influence the sustainability of specific projects are: the strength of the state

and its capacity to redistribute national resources. We hypothesized that (1) a strong state is more likely to be able to assign and maintain higher levels of resources in social sectors like health and therefore is more likely to be able to sustain health projects; (2) a progressive regime, i.e., one more committed to social reorganization, is more likely to sustain health programs than a status quo regime; (3) a more stable regime, which maintains regular and orderly changes in leadership in political and bureaucratic positions, provides a more conducive environment for sustainability; and (4) regimes characterized by nationalistic sensitivity will be less conducive to sustain foreign supported projects. (Bossert, "Can We Return to the Regime for Policy Analysis," Comparative Politics, 1983).

2.2.3 Bilateral Relations

Relations between the U.S. and the host country may also affect sustainability. Good relations facilitate communication and provide a more responsive environment which is likely to result in projects that are better adapted to the local situation. We hypothesized that projects implemented or completed during periods of good relations would be more likely to be sustained.

In this section we also consider the change in U.S. Government development policies in the health sector. U.S. policy in health shifted from an emphasis in the 1960s on infrastructure and water development, to an emphasis in the 1970s on primary health care and an attempt to reach the "poorest of the poor." In the 1980s policies shifted again to a focus on child survival activities. These policy changes may undermine the sustainability of other activities, especially if support is abruptly or radically shmed or withdrawn, with no transitioning or ameliorating plan.

2.2.4 Social and Cultural Context

Sociocultural factors may affect the implementation and sustainability of health projects in a variety of ways. Perhaps most important for this study are the potential barriers between the cultures of the implementors and the beneficiaries. These barriers can lead project designers to propose and attempt to implement activities that are unacceptable to the intended beneficiaries. Since some activities designed to improve health in a population must alter established social and cultural patterns, projects must be designed to be sensitive to the effective means of altering behavior within acceptable cultural boundaries. These factors may be particularly important for projects which expect significant levels of community participation.

We hypothesized that characteristics of sociocultural context which are likely to encourage sustainability of projects are: (1) cultural homogeneity, (2) egalitarian distribution, (3) equal access to power, and (4) sexual equality. Where there are

particularly marked sociocultural distinctions between groups cultural conflict must be overcome.

2.2.5 Economic Context

Changes in the economic well being of the nation are likely to influence the sustainability of most projects. Projects that require national resources will be more likely to be sustained in periods of growth than they would be during periods of economic decline. We will examine each project within the context of the national periods of economic growth and decline.

A second economic factor is the portion of national economic resources available to the government. A Government with a large tax base may be able to devote more national resources to maintaining projects after foreign funding has been terminated. A larger government sector may even be able to weather brief periods of economic decline and provide resources for sustaining projects.

A third aspect of economic resources is confined to the health sector. Projects are implemented within an economic sector in which tradeoffs are implicit. If the health sector is devoting a large portion of its resources to urban based curative health systems, in particular costly hospitals, it may be less likely to shift resources to the A.l.D. supported rural primary care activities after the A.l.D. funding stops.

2.2.6 Private Sector

We hypothesized that the private sector health providers and the existence of an effective network of PVOs to implement A.l.D. projects are contextual factors which might influence the sustainability of projects. In some cases, A.l.D. supported projects incorporate the private sector in relatively effective ways into health delivery system projects. For the most part, however, these services are competing for clients and funding with the public health services that receive most of A.l.D. funding.

Another portion of the private sector is the PVOs and other private sector institutions which act as implementing agencies for A.l.D. and other donors. Sometimes PVOs provide effective alternative implementing institutions for A.l.D. projects. However, sometimes they also compete with each other for clients. And they may have their own institutional routines that are not conducive to sustainability when funding ends. PVO projects may also be small and constitute a difficult project management problem.

2.2.7 Implementing Institutions

Some A.l.D. projects can have major impact on the structure and capacity of implementing institutions. However, in most cases, at least initially, A.l.D. projects are implemented within the

existing institutional structures. The projects may be implemented by a variety of governmental organizations, and by non-governmental organizations as well, although the most prominent organization is often the Ministry of Health.

Six characteristics of these institutions were hypothesized to undermine sustainability: 1) rapid turnover and low quality of top officials, 2) centralization of decision-making, 3) fragmentation of authority and responsibility, 4) low skill levels of personnel, 5) conflicting organizational goals, and 6) for PVOs, the existence of competition among them for funds or beneficiaries.

2.2.8 Donor Coordination

While A.l.D. may try to influence other donors and attempt to coordinate activities with them, in most cases, A.l.D. must work within a context in which other donors define their own objectives and activities. There are few instances of clear and explicit coordination among donors in the countries we have examined. We hypothesized that donor "bandwagons~ would jeopardize sustainability, whereas donor coordination that provided for either explicit division of labor (with one agency providing support for one type of activity while another would support other programs) or sequential support (with one donor providing follow-on funds for the activities of another) was more likely to be conducive to the sustainability of project activities and benefits.

2.2.9 National Commitment to Project Goals and Objectives

Previous studies have found that national commitment to project goals and objectives was one of the most important factors related to project sustainability. This factor is defined as the degree of national consensus on project goals and objectives and is conceptually distinct from commitment of national financial resources. Consensus is identified by the lack of conflict in the political and bureaucratic arenas. It is hypothesized that those projects which enjoy enduring national commitment are more likely to be sustained.

2.3 Project Characteristics

The following factors are those project characteristics that can be altered and controlled by project designers and managers with much greater latitude for choice than is available for contextual factors.

2.3.1 Project Negotiation Process

Related to national commitment is the degree to which a project is designed and implemented through a mutually respectful consensus building process. Projects which are seen as imposed by A.l.D. rather than as emerging through a process of mutually

beneficial dialogue are hypothesized to be less likely to be sustained. Our studies will examine each project design phase with care to determine the extent of consensus gained in this process.

2.3.2 Institutional Organization and Management Characteristics of the Project

This study will examine several managerial factors, as well as the administrative structure of projects and their institutional contexts.

a. Vertical vs. Integrated Project Design

We hypothesized that vertically organized projects which were not well integrated into the existing national administrative structure would be less likely to be sustained.

b. Managerial Leadership

Other evaluations of sustainability have identified managerial leadership qualities as a significant aspect of sustainability. In this study we will explore the managerial capacity of the project and its implementing agencies. One factor of managerial leadership is the continuation of qualified personnel in key implementing positions. We hypothesized that rotation could undermine the potential for sustainability as well as effectiveness of projects.

On the other hand, projects which retain the same leadership, without periodic rotation, may make a project too closely identified with one person and undermine the sustainability of the project when or if that individual is replaced.

c. Administrative Systems and Training

We have hypothesized that projects which include effective reorganization and training in administrative capacity, will be more sustainable than projects with little managerial support.

2.3.3 Financing

Within the context of the uncontrolled economic factors discussed above, several factors which project design and management can control may have an influence on sustainability.

a. National Absorption of Project Costs

We have hypothesized that projects which have an increasing share of project costs absorbed into the national budget during the life of the project will be more likely to be sustained than those which have no phased-in government funding. The logic of this hypothesis is that projects which have gained national budget lines are less likely to be cut off at the end of the projects, than

projects which would require major new national funding at the end of the project in order to absorb the costs previously covered by foreign funds. The effect of Economic Support Funds which often provide counterpart budgetary funding resources should be discounted here. In earlier studies in Honduras and Guatemala we found that the growth in ESF support of counterpart funding for health projects caused considerable concern.

b. Foreign Exchange Component

Since most A.l.D. recipient nations have on-going scarcity of foreign exchange, projects which require large and continuing foreign exchange expenditures for imported inputs were hypothesized to be less likely to be sustained than those which rely on nationally available resources.

c. Tradeoffs with Other Priorities

Since resources devoted to the health sector generally are quite limited, any project which would demand the shifting of national resources in order to cover activities previously funded by foreign sources implies the withdrawal of resources from alternative uses of funding. We hypothesized that, given the generally static nature of health ministry budgets, projects which require greater substitution of resources will be less likely to be sustained.

d. Cost Recovery

It is assumed that if project activities can be supported by cost recovery mechanisms, including especially means of obtaining beneficiaries' payments, that these funds will provide a direct means of supporting the project activities after the A.l.D. funding has been terminated and thus contribute to sustainability.

2.3.4 Technical Requirements

Several factors of projects are related to the technical requirements of the type of project, such as the type and significance of the training component, the degree to which technical assistance is an essential component, and the appropriateness of the technology for the objectives and the context.

a. Technical Training

Training projects and training components of projects with broader objectives are by reputation assumed to be more sustainable than other types of projects. Our central hypothesis is that projects with large training components are more likely to be sustained than those which do not train human resources. A corollary would be that even in large multi-purpose projects which

are not fully sustained, the training component, unless it depends directly on the continuation of the rest of the project activities, is likely to be maintained.

One central component of training projects that may be essential for sustainability, is the establishment of clear salaried positions within the MOH or private sector for all levels of workers except the voluntary community workers. Training projects that train workers with little prospect of obtaining steady employment are not likely to be sustained.

Appropriateness of the training program may also contribute to the sustainability of a project. Many training programs are designed to provide personnel for the broad objectives of providing service to the underserved populations. When training programs are evaluated, particular attention is paid to the curriculum and the location of training facilities. Training programs that provide curriculum designed for low cost, preventive-oriented service and are located in areas which encourage those trained to remain in underserved areas while performing their duties, are deemed likely to be more sustained than those programs which do not focus attention on the broad goals of most A.I.D. projects: providing for the needs of underserved populations.

Training in administration and management, as well as the effectiveness of training, will be discussed in the sections on project administration and effectiveness, respectively.

b. Technical Assistance

We hypothesized that projects which had large sized technical assistance and which did not provide for the increasing development of host country capability were least likely to be sustained. We also expected that technical assistance that was of long duration was more likely to provide for a transfer of knowledge and capability than were short term consultancies.

c. Appropriate Technology

In several cases, it appears that the technology supported by U.S. Government projects may have been inappropriate for the objectives. For instance, the use of certain insecticides in the malaria projects, even after their effectiveness was questioned in the U.S. is an example of inappropriate technology. We hypothesized that projects which used demonstrably appropriate technology are likely to be sustained. Conversely, those that used demonstrably inappropriate technology are not likely to be sustained, nor should they be sustained.

2.3.5 Community Participation and Acceptance

Many projects are designed to encourage community

participation and require community acceptance in order to be effective. Both these factors may be necessary for project activities and benefits to be continued after the A.I.D. funding has ceased. We hypothesized that community participation and acceptance will generate demand for the project services by the beneficiaries and thus promote sustainability.

2.3.6 Project Effectiveness

Many elements may have to be present in order for a project to be effective. We have suggested several elements, such as effective and appropriate training, acceptability by the community, etc. However, whatever contributes to effectiveness, we hypothesized that a project that is effective during its funding life is an important factor in determining sustainability.

Associated with effectiveness, is the appropriateness of project design and its clarity in defining objectives. We hypothesized that projects with clear and appropriate objectives, or with the flexibility to redefine objectives in order to apply project funds to changing needs or obstacles, will be more likely to be sustained.

Hypotheses were tested by use of a chart (see Tables 2 and 3 in Report) that assigned a rating of those factors that were deemed to support (+) or undermine (-) sustainability in each project according to the hypotheses. Factors were judged to be related to sustainability if there were more sustained projects/components with positive ratings than negative ratings and among unsustained project/components the ratings were more often negative than positive. This method was appropriate for countries which had only a few project cases; a more quantitative method was necessary in other countries which had many more project cases to examine.

Individual judgements about each factor, sustainability of activities, relative importance and weighting were inevitably made in the final choices about ratings and in reporting the final analysis. The major judgements are generally discussed in each report; however, many choices were made by each investigator and reviewed by other members of the team to assure some level of consistency and validity. The team had two members of the original Central American teams to assure consistency with prior interpretations.

3. INFORMATION SOURCES AND DATA COLLECTION

This study was initiated with a "desk study" written by a country expert and based on documentation and interviews in Washington. This study formed the basis for orienting the field team and for establishing the basic hypotheses to be researched in more detail. The desk study provided a historical orientation about the projects and the processes; however, little was known about

whether or not the projects had been sustained, and many of the factors could not be examined for lack of reported data.

In Senegal, three external investigators were joined by two Senegalese public health officials for a two week period in the field. The team was oriented by the team leader of the Central American studies, and included the CDIE project manager who had also participated in those studies. The other two external investigators included a public health physician and a demographer, both of whom had prior experience working in Senegal. The Senegalese team members were officials with experience in several A.I.D. projects.

The field work involved intensive interviews with principles involved in all projects under review, as well as visits to several project sites.

Preliminary drafts of this report were shared with the USAID mission for review and comment. All final reports have been reviewed by the CDIE project manager and the team leader of the original Central American studies for comparative purposes. A synthesis of all African countries has been prepared as an initial step in comparative analysis, and is available from CDIE.

APPENDIX B

RURAL HEALTH COMPONENT OF BAKEL IRRIGATED SMALL PERIMETERS PROJECT

1. OVERVIEW OF PROJECT

The Rural Health Component of the Bakel Irrigated Small Perimeters Project (BISP) was added to a proposed agricultural project at the insistence of A.I.D./Washington. The health component was not included in the original project proposal, and was only inserted following review of the Project Paper (PP) by the Executive Committee for Project Review (ECPR). While the health component is consistent with the priorities of the Government of Senegal for the region, it basically functioned parallel to the original project, and was never fully integrated into the agricultural activities.

A brief description of the BISP project is warranted in order to understand the context within which the health component was to take place.

Bakel is a department in the far east region of Senegal, bordering Mali on the Senegal River. The region is populated almost entirely by subsistence farmers who rely on dry season sorghum and millet, and sorghum under recession agriculture following the annual overflow of the river in September and its recession in October. Rice is traditionally grown by women in swampy areas, but frequent crop losses occur due to the vagaries of climate.

The purpose of BISP was to introduce technologies of irrigated agriculture in 23 villages along the river, and to demonstrate the technological and economic feasibility of irrigation in the area. The project expanded upon a pilot project begun in 1975 by a French voluntary organization, the Centre International du Developpement Rural (CIDR); A.I.D. inputs included construction of a central infrastructure; farm development, including diking and the provision of pumps to draw water; and technical assistance. Concern about the possibility of increased incidence of malaria, onchocerciasis, shistosomiasis, and intestinal parasites as a consequence of year-round ponding in the project area prompted the inclusion of a two-part health component in the project design. (Observation of the project site during the dry season found no evidence of ponding. Ponding, which followed the irrigation of dry season crops, disappeared within two days through evaporation and percolation.)

The first component was a health surveillance activity. Its purpose was to collect and analyze data regarding the incidence of the diseases noted above in 25 villages (23 project villages plus 2 control villages). This would then permit the identification of trends in disease incidence in the villages.

The second component focused on health services; it was to function in all project villages. The health services were to diagnose and treat endemic diseases and carry out health education by upgrading existing village dispensaries and by training a cadre of village health workers and sanitarians. This segment had been initiated on a pilot basis by CIDR.

The surveillance sub-component was under the direction of Dr. Samba Diallo, the Director of the Department of Parasitology and Pharmacology at the University of Dakar, and Director of the Service de la Lutte Antipaludique (Anti-Malarial Services-SLA) at Thies, responsible to the Ministry of Health. As part of this component four of the local nurses who ran the health posts were trained in laboratory techniques and given basic equipment (microscopes, slides, stain). The training was a one month program carried out by Dr. Diallo in October 1978.

This epidemiological sub-component was, however, basically carried out by Dr. Diallo and a team from the University who, according to a 1982 evaluation, by-passed the local nurses during their study. Two major studies were published demonstrating village locations of the four basic diseases, but they suffered from methodological flaws. Further, the studies appear to have had little impact on the department health program, until a seminar held at the end of the project in 1984. The seminar presented the general results of the studies, and developed proposals for specific disease programs, none of which were ever implemented. Furthermore, while Dr. Diallo has sought Government support to carry out similar surveys in other parts of the Senegal River Basin, he has been unsuccessful to date in carrying out related studies. Thus, the expectation that the project would result in the institutionalization of a health monitoring capacity within Senegalese development projects was not realized, and this sub-component clearly was not sustained beyond the life of the project.

The second subcomponent focused on the development of primary health care facilities and activities in the area, to augment the existing 10 dispensaries and 1 health center in the Tambacounda department. It provided training and some equipment for the 23 villages. Specifically, the Project Paper called for:

1. Training dispensary nurses in microscopy and education of VHWS;
2. Purchase of 12 microscopes;
3. Training 23 village sanitarians and 23 MCH workers;
4. Training village health workers for those villages without dispensaries;

5. Provision of basic drugs for the 23 villages; and
6. Establishment of 23 self-supported village health huts.

With the trained secouristes, the Village Health Workers (VHWs) and midwives supervised by village health committees were to operate health huts providing first aid and basic drugs on a revolving fund basis. A series of training activities, some coordinated with the Sine Saloum Rural Health Project and others with other training technical assistance, was carried out from June 1979 through the end of the project in 1984. These courses prepared the nurses to motivate communities to create Health Committees, select VHWs, and supervise the creation or improvement of health huts in each of the project villages. Courses emphasized primary health care, supervision, community motivation, training of trainers, sanitation, maternal and child health, and oral rehydration therapy. They were usually two weeks in length, and all local nurses participated.

The project also supplied an initial stock of medicines and basic equipment for the health huts, and mobylettes for the nurses, as well as some reconstruction of departmental facilities, such as pharmacies and classrooms.

The implementation of the primary health care activities was first assisted by a Peace Corps Volunteer (PCV) who provided technical assistance, mainly in community organizing, until 1982. The PCV was responsible for management of the project as well as technical assistance. His work was hampered, however, by a lack of transport and administrative support from USAID/Dakar. Subsequent to his departure, technical assistance provided to the project consisted of sporadic contact with the staff of the Sine Saloum Rural Health Project and part-time input by a personal services contractor (PSC).

The project initially suffered from its incomplete integration into a variety of different administrative structures. It was to be integrated into the Society for the Management and Exploitation of the Delta (SAED), the rural extension service providing technical inputs to the agricultural component of the project. It was also planned to be integrated into the Ministry of Public Health and the normal territorial administrative structure.

The project had major difficulties during its early phases. The communities initially did not maintain drug stocks, although the revolving drug funds were basically solvent. This was in part due to delays in arrival of A.I.D.-provided commodities, and in part due to inadequate instruction in resupply procedures. The problems were eventually resolved, and the programs of maternal and child health (MCH) and primary health care (PHC) at the local level were seen as effective and appreciated by the communities. Between 1982 and 1984 initial problems in maintaining health committee

financing capabilities appear to have been resolved to such an extent that revolving drug funds continue to be the major source of funding for health post drug supplies (although some drug shortages continue to be reported in the department).

During the life of the project, many communities, often using remittances sent home by migrant workers from the area, upgraded Health Huts into Health Posts and petitioned the Ministry to provide nurses to staff them. Currently all but one of the Health Huts has been converted, and it is only awaiting the assignment of a nurse. The VHWS trained in the project have become aides to the nurses, and are paid with funds raised through the revolving drug fund. The MCH and PHC programs seem to be well accepted and are continuing. The sanitation programs, especially the Sanitation Days to clean the communities and the latrines, were not sustained.

2. CONTEXTUAL FACTORS

2.1 Natural Disasters

While no major natural disasters occurred in this region during the period of the project, it must be noted that difficult living conditions and isolation are a way of life in Bakel. Like most of the Sahel region, Bakel suffered from limited rains during the early 1980s. Communication by telephone has only recently become possible; the Regional Prefect communicated with Bakel by short wave radio during the project duration. Transportation was also problematic, and contributed to limited supervision and technical assistance. The arduous conditions appear to have had a more severe impact on the primary health care component of the project than the epidemiological study.

2.2 Political Factors

Throughout the term of the project, the Government of Senegal continued to implement its policy of decentralization, initiated in 1972 as the Territorial Administrative Reform (RAT). The project goal to make basic health care available at the community level was consistent with national health policy. If anything, the inhabitants of Bakel may have outpaced the Government's ability to respond to their needs. It became a matter of prestige for families of emigrants to sponsor the construction of health huts and their upgrading to health posts; the Ministry of Health did not always supply the personnel requested.²

²Nor would it have been rational for them to do so. An example is local requests for additional midwives, in an area of low birth rates due to the prolonged residence overseas of many male workers.

It should be noted that although the GOS advocated widespread distribution of health care services, during this same period a strong lobby was successful in maintaining continued, perhaps disproportionate flow of resources to the urban-based hospital network, relative to resources available to the rural areas.

The presidency passed from Senghor to Diouf during the term of this project, but the government, a democratic socialist regime, remained stable throughout. While the project goals mirrored government intentions to provide low-cost health care to all citizens, low state capacity hindered efficient implementation, and for the epidemiological component, sustainability. For the primary health care component, government limitations in funding and availability of trained personnel were overcome by the project design, with training and self-financing being major features of the project. On the other hand, it was claimed that decisions regarding the continuation of the epidemiological surveys with government support were left to young individuals with no appreciation of the value and utility of such data collection.

2.3 Bilateral Relations

Senegal-U.S. bilateral relations were cordial during the term of this project. Project success was of interest to the USAID staff, and they successfully implemented three project extensions (to December 1983, June 1984 and December 1985) in order to ensure achievement of project goals. Further continuation of the rural health services delivery component may have been hobbled by the shift in A.I.D. policy to emphasize family planning, which occurred during the late 1970s and early 1980s. In 1984-1985 a very large bilateral program was designed, the Family Health Project, with the lion's share of its resources being devoted to family planning.

2.4 Socio-Cultural Factors

In many ways, the Bakel Department offers socio-cultural advantages which might contribute to the successful implementation of a number of development projects. The main ethnic group found in the region are the Soninke (Sarakolle), an independent and self-motivated group. In many communities, collective gardens had been established prior to the implementation of the subject project, and proceeds from the sale of produce used to set up pharmacies and build dispensaries and schools. The villages watch and compete with each other. The stakes in these rivalries often become substantial, as the region also is characterized by high levels of labor migration, mainly to France, by the men of the community. Migrants each remit as much as \$1000 annually, and estimates of total family income derived from external sources range from a low of ten percent to a high of 75 percent. This income is used to construct health facilities and mosques, as well as to purchase consumer goods.

Emigration, and the resultant acquisition of skills such as speaking French, reading, writing, counting and negotiating, has also served to blur some of the longstanding caste and ethnic differences in the area. This was more evident in the agricultural components of BISP, where work groups usually included members of several social classes, and were occasionally led by members of the lower castes who had travelled outside the region. The health component suffered some criticism by those who believed it was inappropriate for members of the lower castes, selected as VHWS, to speak with them. Given the closed nature of the community, the health facility staff detailed from other parts of Senegal were socially isolated in the village neighborhoods. Also, members of the minority Toucouleur ethnic group were sometimes reluctant to provide stool samples for the epidemiological survey.

Urban-rural inequalities appear to have influenced the project only in so far as the project area was at a disadvantage from the outset in terms of its proximity to resources, communication and transportation. The project itself was implemented only in rural areas, and hence did not foster such inequalities. Similarly, gender differences do not seem to have played a role in the functioning of either health sub-project.

2.5 Economic Factors

Difficult environmental factors notwithstanding, the project area was one in which the local population enjoyed an economic "safety net" as a result of the constant flow of remittances sent by workers abroad. In this way, they were shielded somewhat from the vagaries of local production, and did not need to rely on the national or regional government to provide financial resources required for infrastructure development. This is important, in that the project was carried out during a period of economic stagnation for Senegal, and allocations for health were not being increased.

2.6 Private Sector and Non-governmental Organizations

The health component of the project faced limited competition from private sector sources. Local pharmacies presented an alternative source of drugs and medications, as they stocked all drugs intended to be available at the health huts, at a price about 35 percent higher than those in Dakar (mainly reflecting high transport costs of small packages by rail). However, there were only four private pharmacies in the Bakel Department in 1980, thus the availability of an alternative source was offset by travel time and expense.

The availability of local non-governmental organizations to implement the project was not of importance to these sub-projects.

2.7 Implementing Institution

While it was originally envisioned that SAED, the implementing institution for the agricultural component, would coordinate the health component as well, their role was never clearly defined, and local technicians remained ambivalent to the health activities throughout their implementation. They had neither expertise nor interest in primary health care services, and nothing was done to integrate the health component into the overarching agricultural project.

Each component of the health project was in fact carried out by a separate institution, although it was planned that health services staff would participate in the epidemiological survey. The Technical Director was the Regional Medical Officer based in the regional capital of Tambacounda, several hundred miles from Bakel Department. The Administrative Director was the Regional Governor. There were no telephone links with Bakel, and overland travel was limited during the rainy season. By 1982 this administrative arrangement was judged to be too far from the actual project to be effective, and responsibility was moved to the Department level. There remained a division between the Technical Director, now the Department Medical Officer, and the Administrator, the Regional Prefect. While this shift resulted in the project becoming integrated into the local health structure, it also resulted in bad publicity at the regional and national levels since these levels lost their direct involvement and resented the loss.

Dr. Samba Diallo, in charge of the epidemiological component, trained four nurses stationed in Bakel in microscopy, but the epidemiological surveys and subsequent laboratory analysis were actually carried out by technicians at the University of Dakar. To the extent that this was efficient, and that the Department of Parasitology had trained staff and adequate supplies to carry out the task, this was a suitable arrangement. However, the trained nurses were not given an opportunity to practice their newly acquired skills, and microscopes and supplies provided to the health posts were not utilized.

The health service component was carried out by the Ministry of Health, through their locally assigned staff. Administrative oversight was placed with the Regional Prefect in Tambacounda, which, due to the above-mentioned difficulties of communication and transport, hindered timely implementation and supervision of activities in Bakel. These situational problems were exacerbated by the demands for salary bonuses and gifts made by the Prefect in position at the time of project implementation. He was known to have refused authorization of paperwork required to send staff members for training, apparently in retaliation for not receiving a bonus. A subsequent change of Prefects and the shift of project authority to the Chief Medical Officer of Bakel Department alleviated many problems.

Management from USAID/Dakar also was fragmented. The project was evidently viewed by some as an add-on forced by A.I.D./Washington, of secondary importance to the larger agricultural project. A.I.D. authority was split within the Mission between the PMA for crop production, and the RHO for health. The only integration to take place concerned the budget, which was administered by the PMA, and disbursed at the request of the RHO. A.I.D. also did not prepare amendments to the Project Agreement so as to maintain clear output targets. It is difficult to trace the history of the project and its accomplishments through official documents.

2.8 International Donor Policies and Coordination

As far as can be determined, the sole element requiring donor coordination was the training provided to local nurses, which in turn enabled them to train VHWS. The training was carried out by a midwife in Fatick, under the auspices of the Rural Pharmacy project sponsored by the Netherlands. Some nurses' training was coordinated with the Sine Saloum Rural Health project, whereby nurses from Bakel were included in training sessions planned for nurses in other regions. There appeared to be little competition or conflict with other donors.

2.9 National Commitment

In the context of this integrated project, it is likely that the Government of the Republic of Senegal manifested a stronger commitment to the agricultural component. Nonetheless, when approached to consider the addition of the health component to the original project design, the Government concurred. The Project Paper was initially drafted with little concern for the health status and needs of Bakel. As A.I.D. discussed the health needs with the Government, a more elaborate plan developed. The strategy adopted eventually included many of the elements of the Sine Saloum Rural Health Project. The Government has expressed its commitment to the decentralization of health care, but has not necessarily provided the resources to achieve this goal. The project provided one means to increase the availability of primary health care in a region not fully covered by Government services at the time of project implementation.

3. PROJECT CHARACTERISTICS

3.1 Negotiation Process

There is little record of the negotiation process associated with the health component of the project. The initiative for its inclusion seems to have come from A.I.D.'s Executive Committee for Project Review (EGPR), a panel which reviews proposed projects prior to recommending Agency approval. Upon reviewing the Bakel Irrigated Small Perimeters project, the ECPR expressed concern that

the increased volume of standing water generated by the project would lead to a rise in water-related diseases. Subsequently two environmental assessments were carried out. The first recommended free distribution of malaria prophylaxes to all residents of the 23 project villages during the rainy season. This was not accepted as a suitable response, and a second assessment was carried out by a team on behalf of the American Public Health Association. The recommendations of that team-to undertake epidemiological studies in the region in order to monitor health trends and to develop the community primary health care capabilities-were acceptable to A.l.D., and were refined in consultation with GOS officials.

3.2 Implementing Institution and Management

Reflective of its ad hoc addition to the agricultural project, the health component of BISP suffered from the outset from poor design, lack of definition of roles of the institutions involved, and vague management. Perhaps most crucial was the less than clear division of roles, for that allowed the project to drift, without suitable resolution of problems as they arose. Indeed, the implementation of the health services component was delayed almost one year after an implementation letter was signed, until an A.l.D. technician was hired to work in Bakel.

The original administrative system called for in the project vested authority with the Regional Prefect. This was problematic, as he requested an indemnity (salary supplement) in order to carry out his work. When his request was refused by A.l.D., he stonewalled project operations by refusing to co-sign checks with the project Technical Director, as required. This Prefect was eventually assigned to another region, and was replaced by a man sympathetic to the project goals.

The divided and unstable leadership lead to authority for the project being shifted from the regional to departmental level. Even after this shift, the Department Medical Officer changed again during the last phase of the project.

The two sub-components of the project were carried out by different implementing institutions. The epidemiological component, as noted earlier, was under the direction of the chief of the Department of Parasitology and Pharmacology of the University of Dakar. It was run as a vertical program of the University, and was not part of the goals of that institution. The nurses who received training as part of the program did not utilize their skills. Dr. Diallo has not received any additional funding to carry out further studies in the region, or elsewhere along the river basin, nor have any students carried out further analysis of the data collected in Bakel. Additional aspects of this sub-component are discussed below under Content Aspects. It should be noted that a timetable for the submission of survey results was not established at the outset of the project, and reports were consistently received late.

In contrast, the primary health care program .was eventually integrated into the existing health system at the local level once the administrative difficulties were resolved. In contrast to the confusion and instability in administration, the nurses themselves remained stable, were highly motivated by the project, and saw themselves as a team. They instituted departmental coordination meetings which provided a forum for sharing information, and may have been the actual center of leadership for the project. In this case, the project goals were viewed as consistent with the institutional goals of the Ministry of Public Health, and were supported as they contributed to the achievement of these goals.

The lower level functioning of the project may have been in part due to the technical assistance provided by the PCV and PSC. They were able to offer one-on-one training in administration, which was not offered to the higher-level managers affiliated with the project.

3.3 Financing

The national government responded to the requests of the Bakel villages and assigned staff to the upgraded health posts. Routine costs are being covered as part of the decentralized rural health system. It appears that the drugs needed by the health posts are available through the central pharmacy, and there has been little difficulty replacing drugs previously provided by A.I.D. Thus, foreign exchange demands seem to be nil. The health posts do sell drugs and use the proceeds to maintain their stocks. During the life of the project, both the local communities and the government increased their share of financial contributions, providing resources to replace drugs, rebuild facilities, and finance the new nurses for the health posts.

The epidemiological component was wholly supported by external funds, and Dr. Diallo has not been able up to the present time to secure funds for additional work from sources within or external to Senegal.

3.4 Content Aspects

As has been previously noted, the project design was weak, and offered as an add-on to a largely unrelated project. This is reflected in the budget allocation evident in the 1977 project paper, in which the share for health activities (\$502,000) was only 6.3 percent of the total of \$7.99 million. If one considers the two health components separately, the surveillance activities were allocated 3.7 percent of the total budget (\$295,000), while the service delivery component was allocated only 2.6 percent (\$207,000). If one considers the ratio of health allocations to the U.S. grant for the project (\$5.86 million), the allocations to the subprojects are even more skewed. The surveillance activity (\$295,000) accounts for 5.0 percent of the U.S. contribution, while

the health services (\$107,000³) reduces to only 1.8 percent of the total U.S. grant. These amounts were to be disbursed over a five-year period, until project completion in 1982. Over the life of the project, additional funds were added, but they were not large amounts.

The primary health care component of the project coincided with the Government of Senegal's program of malaria prophylaxis and chemotherapy. At the time of project implementation, the government program was not operating well due to economic factors, a situation which was exacerbated in Bakel by the poor transportation network. Thus, the opportunity to undertake this vital work under the project auspices was welcomed.

Training of nurses and village health workers was carried out through the project. The nurses received training in microscopy and in training of village health workers. As has been remarked, the training in microscopy was never exercised. The training to train VHWS was given by a midwife working with the Village Pharmacy Project in Fatick. The nurses have used the methods they learned, supported by VHW teaching materials developed by the Sine Saloum Rural Health Project to train VHWS in the diagnosis and treatment of basic village health problems.

The local agent of Promotion Humaine worked with the project technical assistant to organize villages and establish village management committees; however almost two years into the project, economically and socially sound drug pricing policies, reorder and resupply mechanisms, and VHW remuneration guidelines were not in place.

Efforts were made to train local residents as village sanitarians, with the expectation that they would promote community and household sanitation activities. While some activities were carried out, these were not well received by village residents, and the efforts of sanitarians were not maintained. Some sanitarians were subsequently trained as first aid workers (secouristes) and worked from the village health hut.

Technical assistance to the project was mainly provided in training activities, and did not form a large component of the project. The Project Paper called for technical assistance to be included in the surveillance sub-component, to assist in the analysis of the epidemiological survey. There is no evidence that this took place.

An initial census of the 23 project villages was carried out in two phases (15 villages and 8 villages). The epidemiological

³The difference of \$100,000 was to be paid by the GOS in the form of salaries of MOPH staff.

survey was carried out in only four villages, instead of the 25 originally planned (23 project villages plus two control villages). The four villages were selected from among the 23 project villages on the basis of tribal and ecological considerations; no controls were included. Instead of interviewing a sample of residents, the entire population of each village was to be included in the biannual surveys (one during the dry season, and one at the end of the rainy season); however, some subjects were lost to each census as not all residents were present at the time of fieldwork.

No correlation was established between the health surveys and the development of the irrigated perimeters, nor were entomological data for malaria, schistosomiasis, or onchocerciasis monitoring collected. It is impossible to tell if changes in health status were caused by the irrigated perimeters or something else. Furthermore, the project may have suffered from maturation, that is, as the project villages became more aware of health problems through their participation in the surveys, they may become more likely to seek treatment.

3.5 Community Participation

The Bakel Irrigated Small Perimeters project had its origins in the desire of one local farmer to improve agricultural conditions, and replicate farming methods that he had seen used in France. That initiative, which eventually resulted in a multi-million dollar program still underway, was also demonstrated in the health component. During the life of the project, many communities used their own resources, including migrants' remittances, to buy medications, to construct health huts augmenting basic supplies given by A.I.D., and to convert health huts into health posts, and they petitioned the Ministry of Public Health to supply nurses. Currently all health huts in project villages have been converted, and only one awaits the assignment of a nurse.

3.6 Project Effectiveness

The activities of the nurses and VHWS appear to have had an impact on raising health awareness in the area. The project is perceived of as having been effective by its constituents, although sanitation activities proposed in the project design have not continued. An evaluation team reported that they were "...impressed by the positive response of the villagers to the village health huts".

APPENDIX C

CASAMANCE REGIONAL DEVELOPMENT PROJECT: HEALTH AND NUTRITION COMPONENT

1. OVERVIEW OF THE PROJECT

The Casamance Regional Development Project (1978-1985) was designed to assist agricultural development and health and nutrition status in the southernmost region of Senegal. One of the richer agricultural areas in Senegal, the Casamance was, nevertheless, importing basic food items. Agricultural production was also threatened by increasing salt water intrusion. Infant mortality (170 per 1000 live births) and malnutrition were high. Several donors had been active in the region (West Germany, China, World Bank, and the African Development Bank). These efforts were coordinated by the Societe de Mis en Valeur de la Casamance (SOMIVAC), a regional development agency of the Ministry of Social Development. The USAID project objectives were to (1) improve SOMIVAC's capacity for development planning; (2) assist the agency develop agricultural technology; and (3) foster social development, particularly functional literacy and rural health outreach.

The health and nutrition component (\$860,000) was designed to coordinate efforts among several agencies -- the Ministry of Public Health, the Ministry of Rural Development, SOMIVAC, and the Ministry of Social Development -- through the overall project management unit called Project Integre de Developement Agricole de la Basse Casamance (PIDAC).

Most of the health activities were implemented through the existing MCH network of the Ministry of Health, primarily through the nurses stationed in the health centers of the region. However, the health and nutrition component was also integrated into the agricultural component through health and nutrition training for Rural Development Agents of the Ministry of Rural Development.

Lack of clarity in the roles of the different agencies responsible for the project led to considerable delays in the implementation of the project. A literacy training unit which was to be responsible for nonformal education and for health education materials was never formed. The nurses' union boycotted the project over the role of the Rural Development Agents. The regional health officials, who were not involved in project development but were to be responsible for a major part of the implementation, were reluctant to commit major time or resources to the project.

In 1983-84 the project was redesigned with significant participation of local and national level officials. It focused on development of two central activities: (1) health and nutrition education and training for nurses and Rural Development Agents; and (2) an anti-malaria campaign and development of village pharmacies.

Special attention was given to additional technical assistance which rose to 60% of the redesigned budget. The redesigned project was initiated with a three day seminar organized jointly by the three responsible ministries and focusing on motivation and skills of rural development agents. The field activities were initiated in eight villages in the Bignona region and then extended to 50 villages throughout the lower Casamance region. The project redesign did not involve an extension of the life of project so the redesigned project was only implemented for 22 months.

In a formal sense the project was continued for over three years after the A.I.D. funding stopped since the Ministry of Health provided salary support for the GOS counterpart -- a health technician who provided technical assistance -- through October 1988. Nevertheless, it was difficult to determine how much of the project activities were actually sustained three years after the termination of USAID funding. There was no formal evaluation at the end of the project. Informants with knowledge of the project and the region were not easy to identify and interview. The brief field visit to the Casamance region that one member of our team made was insufficient to evaluate systematically what remained of the project. However, it was clear from interviews and the field visit that some nurses and agricultural agents were still providing health and nutrition education to mothers in their respective villages and that village pharmacies that had been created by the project were still in operation and that chloroquine was still available in some villages. It was also clear that many agents were no longer utilizing their training in health education and that many village pharmacies -- including those in villages visited by our team member -- were no longer functional. Since we did not have sufficient evidence to determine the extent to which overall activities were continuing but had evidence of some continuation, we concluded that this project was only modestly sustained.

2. CONTEXTUAL FACTORS

2.1 Natural Disasters

Although the drought prevailing in the rest of Senegal also affected the Casamance, resulting in accelerated salt-water intrusion and lower food production, it is not clear what effect it had on the sustainability of the health component of the Casamance project.

2.2 Political Context and National Commitment

The political context described in the previous annex was similar for the Casamance project. In addition there was a political campaign by an opposition political party that put in relief the conflict over the primary care orientation of the project. Slogans announcing that "Soins de Sante Primaire = Pauvre Soins de Sante" (Primary Health Care = Poor Health Care) were part

of the campaign to undermine the government's program. It is not clear what effect this opposition had on project sustainability, although it indicates the weakness of national commitment.

2.3 Economic Context

The Casamance has a more favorable economic context than other poor regions of Senegal. It has a more tropical climate, with more rainfall, and more fertile soil. Nevertheless, this marginal advantage has not brought significantly higher standards of living. The economy of Casamance tends to reflect the same pattern as the overall national economy --one of general decline since the mid 1970's.

2.4 Socio-Cultural Context

Unlike the Bakel region, the Casamance region did not have an unusually self-motivated tribal culture, nor did Casamance enjoy the benefits of remittances from migrant workers.

2.5 Private Sector

The Casamance regions has received considerable support from PVOs, perhaps more than other regions. CRS and various church missions are important sources of preventive and curative care. The original project envisioned CRS participation for provision of food supplements of the PL480 program. The project redesign dropped this element.

2.6 Implementing Agencies

The original project design envisioned a single coordination unit (PIDAC) which was to coordinate the participation of three agencies -- the Ministry of Health, Social Welfare, and Rural Development and the regional dependency of the Ministry of Social Welfare: SOMIVAC. None of these institutions was particularly strong. Each was fragmented into separate and sometimes competing vertical programs.

While the Ministries were decentralized by the 1972 regionalization law, within the regions the PIDAC and SOMIVAC were centralized and inefficient. None of the implementing agencies had strong management capacity.

The redesign in 1984 shifted responsibility from the regional units to the line Ministries. This change facilitated implementation by reducing the needs for coordination, but it did not change the underlying structural weakness of the implementing institutions.

2.7 International Donors

Casamance has been the recipient of significant donor assistance from UNICEF, World Bank, Belgium, Switzerland, China, Germany, Canada and the U.S.. Indeed, it has appeared to be so favored that other regions have attempted to block assistance to Casamance on the grounds that other regions have not been as fortunate. Nevertheless, there has been little coordination among the various donors in any field.

2.8 Other Context Factors

We found no evidence that would differentiate the Casamance and Bakel projects for the following factors: (1) bilateral U.S. - Senegal relations, and (2) economic levels.

3. PROJECT CHARACTERISTICS

3.1 Project Negotiation Process

The initial project was developed under the auspices of the Ministry of Rural Development with little participation of the health sector personnel. In particular, the Chief Medical Officer of the Region was not involved, although his role in implementation was to be crucial.

The redesign, however, involved a smooth and lengthy (three year) process of give and take and respectful consensus building in which Ministry of Health personnel at both the national and regional levels were fully involved. Some of the advantages of this process came from changes in personnel in the GOS and in USAID.

3.2 Institutional Characteristics

The original project design suffered from its dependence on coordination among three separate ministries and two regional agencies. The project attempted to integrate separate institutions without clearly defining responsibilities and without sufficient involvement of these agencies in project design. This structure led to serious delays in implementation that were not addressed until after the mid-term evaluation and the subsequent three year period of redesign.

The redesigned program managed to establish clearly defined responsibilities and to integrate the health and nutrition activities into the on-going activities of the Ministry of Health health center network at the periphery. It was also able to coordinate training programs so that both nurses in the Ministry of Health and the Rural Development Agents of the Ministry of Rural Development were trained in health and nutrition education. The project therefore was fairly well integrated into the lowest levels of the two ministries and its administrative structure was

regionalized so that responsibility for activities were decentralized to the regional authorities of each Ministry.

While the redesigned project was not well integrated at higher levels, it was not a traditional vertical program. It was not a separate activity with a separate administrative hierarchy, rather it was a training program which supported health and nutrition education and village pharmacies through the established local administrative structures of the two ministries involved.

The leadership of the redesigned project was also of considerably high quality. Both the A.I.D. field coordinator and the local counterparts were very capable and were responsible for implementing significant activities in the brief 22 months of the redesigned project's life.

While several of the officials involved in the project had benefitted from overseas training in administration, the project itself did not sponsor administrative development and training.

3.3 Financing

There was considerable national contribution to this project. The salary costs of nurses and project officials were paid by the Ministry of Health and the Ministry of Health continued to support local technical assistance for over three years after the A.I.D. funding had ceased.

In addition, the village pharmacies realized significant cost recovery from the revolving drug funds. Nivaquine tablets were sold at nominal price of 10 CFA for a weekly dose for children and 5 CFA per tablet for adults. All children in each village had a chart for parasite treatment. This chart cost 25 CFA. It is likely that only those villages which established functioning revolving funds during the life of the project successfully sustained this activity.

3.4 Content Aspects

While the project goals, objectives and implementation strategies were poorly designed in the original project, these problems were overcome in the redesign phase when the objectives of malaria and parasite treatment, health and nutrition education were established and clear institutional responsibilities were established. These objectives were, like the other PHC programs, designed with appropriate technology in mind. Over fifty nurses and Rural Development Agents were trained and given appropriately designed educational materials in five different local languages. This material was still in evidence during the field visit of our team member.

Like the other rural development project, the health component of this project was relatively small (\$860,000), suggesting that it

should not have been difficult to sustain with minimal financing.

The core of the redesigned project was training. Both nurses and Rural Development Agents received training in health and nutrition education with a focus on training mothers in health and nutrition.

The technical assistance in the redesigned project was minimal. During the final phase of the project only one Ministry of Health counterpart was permanently assigned to provide technical assistance. However, it was this technical assistance that was continued for three years after the end of project.

3.5 Community Participation

Community participation was an essential part of this project -- especially in the development and implementation of the village pharmacies. Informants suggest that participation was high throughout the redesigned project and continues in several villages.

3.6 Project Effectiveness

At the local level this project was viewed as effective, although it was felt that the 22 months of the redesigned project was too short to allow the project to realize its full potential. Nevertheless, the reputation of the project continues to be quite good.

APPENDIX D

SINE SALOUM RURAL HEALTH SERVICES DEVELOPMENT PROJECT

1. OVERVIEW OF THE PROJECT

The Sine Saloum Rural Health Services Development Project, designed in 1977 and one of A.I.D.'s first primary health care projects in sub-Saharan Africa, had two purposes: (1) establish a network of 600 village health huts staffed and supported by 1800 community level personnel in 6 departments of the region; and (2) to improve and strengthen the health services support infrastructure of the Government of Senegal.

The health huts were a new, "front line" structure in the national health system, intended to provide basic health care within easy reach of the country's largely rural population. The plan called for the construction of 8 to 10 health huts to be supervised by each health post, providing treatment for common ailments. Staff would consist of a "secouriste" who would offer first aid and dispense basic medications, and a "matrone" or midwife, to assist with local births. It was also planned that a sanitarian would promote individual and communal sanitary practices among the villagers. The health huts were to be selfsustaining, with much of the responsibility for the local health operation assigned to the villagers themselves, who were to build the health huts through a network of management committees and rural community councils. They were also responsible for resupplying these huts with basic drugs needed to treat the major illnesses of the region. The costs for pharmaceuticals and services were to be borne by the villagers; they were also to contribute to salaries of part-time village health workers (health assistant, midwife, and sanitarian).

The principal elements of the project included:

1. Renovation of 58 existing health posts and construction of 15 new posts (plus 6 to be constructed by the GOS);
2. Renovation of a regional school for training environmental sanitation workers;
3. Provision of cement and other materials for construction of 600 health huts by villagers;
4. Provision of vehicles, horses and buggies, audio-visual aids, and literacy and teaching aids;
5. Training for 1800 village health workers (VHWs), their supervisors, and environmental sanitation workers;

6. Technical assistance in curriculum development and training;
7. Long term technical assistance in public health administration and nurse-midwife training; and
8. Program evaluation, including a baseline study and an independent evaluation.

The project experienced numerous delays from the outset, and the first health hut was officially opened in June 1979.

By 1980, more than 400 villages in Sine Saloum⁴ had constructed health huts. Villagers had organized health committees, helped construct or renovate health huts, and had selected candidates for training. The Ministry of Health (MOH) had developed materials for training the workers, and had trained and deployed hundreds of workers to health huts or health posts. Record keeping and drug procurement systems were implemented, and initial and replacement drug stock had been provided. The MOH instituted a schedule of fees for hut visits and drugs. Community motivation activities were initiated. Health post staff trained and partially paid by the project were supervising health workers, and were themselves supervised by regional and departmental staff.

Nonetheless, these achievements masked fundamental weaknesses which were deemed so critical as to jeopardize the viability of the entire system. The project was overambitious, health huts were not financially viable, supervision and support were weak, villagers were poorly trained and motivated for their roles, drug supply was inadequate, village hygiene workers were not respected and hence were underutilized, and there were no data by which to assess project impact, as a planned epidemiological survey never was fielded.

Administrative authority for the project rested with the Governor of the Sine Saloum region, who tried to manage the day to day operation of the project himself, rather than delegate tasks. Coordination among the principal actors (Ministry of Public Health, Ministry of Social Affairs, Ministry of Public Works, and the village communities) was minimal; conflicts arose as each went about their own work. Within one year after the initial 110 health huts opened, one-third had closed. The communities rejected the huts as they were not involved in choosing sites, committee representatives, or the VHWS.

⁴The Sine Saloum region was divided into the regions of Fatick and Koalack during the term of the project, but for consistency, this discussion will continue to refer to project activities as being carried out in the single, combined area of Sine Saloum.

According to project staff, the damaging effect of these events were noted, and numerous reports were sent to the Ministry of Health and A.I.D., neither of which took firm action to resolve the problems. It was not until an external, mid-term evaluation of the project took place in 1980 that the situation changed. While the evaluation identified significant achievements, it also found "... a project with serious problems and in danger of collapse".

The evaluation concluded that the program was generally too ambitious in scope, and the pace of implementation had been too rapid to organize and train village health committees properly, and develop an infrastructure capable of adequately supporting the growing health care system.

The Government of Senegal and USAID/Dakar immediately responded to the findings of the evaluation, and began an intensive and determined effort to redesign the project. The redesign emphasized the need for an improved management structure, additional training for village management committees, retraining for VHWS, improvement in the drug resupply system, and health hut financial viability.

Given that the project as originally conceived was in danger of collapse before it reached its midpoint, it is highly unlikely that it would have achieved a high probability of sustainability. The redesign, however, led to the development and implementation of a much more viable project, within which many elements have become integrated into the national health services system. In the discussion of factors contributing to sustainability which follows, attention will be focused mainly on the redesigned project and its subsequent follow-on, with reference made to the earlier project as necessary.

2. CONTEXTUAL FACTORS

2.1 Natural Disasters

The Sine Saloum region suffered no extraordinary natural disasters during the time of the project. Like all of Senegal, it has experienced cyclical periods of drought which affect both the health and economic status of local inhabitants. There is no evidence, however, of pronounced impact of this factor; even during periods of economic hardship, the majority of patrons of the health huts continued to pay for medications received.

2.2 Political Factors

A number of political factors underlie the implementation and possible sustainability of the Rural Health Project. First, the Territorial Administrative Reform (RAT) initiated by the GOS in 1972 decentralized public administration to the regional level, increasing the control and decision-making which took place

locally. Sine Saloum was the second region (after Thies) to introduce the decentralized authority. Its selection as a site within which to test the feasibility of community-supported health services was enthusiastically greeted by young, idealistic MOH staff.

1978 was also an election year in Senegal. Local politicians become concerned with the health project, and perceived their ability to influence health hut site selection and selection of VHWS as a means to win votes.

Finally, one informant cited an apparent jealousy on the part of politicians in other regions toward the achievements of the SSRHP. While on one hand they are anxious to replicate aspects of the project in their respective regions, they are thought not to be sufficiently committed to fully study the project, and organize the internal and external resources required to implement similar activities. At the same time, they have attempted to block allocation of additional resources to Sine Saloum, arguing that the region has already been recipient of sufficient funds and manpower, and that attention should be given to other parts of the country.

These factors contributed differently to the potential sustainability of the Rural Health Project. The decentralization promoted by the RAT permitted a concentration of administrative and technical authority at the regional level, which in principal should have allowed for more efficient project operation. In fact, the ability to properly exercise that authority varied greatly with the individuals in charge, who observed their independence from the central offices of the MOH in widely divergent ways. (This will be discussed below under the heading of Implementing Institution and Management.)

The influence of local politics on project implementation was evidenced in the number of health posts closed soon after operations began, often because they competed with closely situated facilities for the same clients. Similarly, project staff selected as a result of favoritism were often rejected by clients as unacceptable. Both situations may have been alleviated, if not wholly avoided, had suitable criteria for site and personnel selection been identified in an early stage of project implementation.

Finally, to the extent that other regions perceive SSRHP as a threat to their ability to access scarce resources, efforts may arise from the outside to undermine program continuity. That is, if an attitude that the project region has enjoyed disproportionate inputs for more than a decade is allowed to grow, there may be unwarranted struggles for support to institutionalize project activities.

It should be remarked that as noted in other sections of this

report, the presidency passed from Senghor to his hand picked, but elected, successor, Abdou Diouf during the project period. The change of authority does not seem to have altered the commitment of this democratic socialist state to its poor population. Nevertheless, with the exception of a five-year period in the early 1980s, the Ministry of Public Health has been among the weakest in the government, and has not successfully challenged the continued allocation of resources to urban-based hospital programs.

2.3 Bilateral Relations

Bilateral relations between the United States and Senegal were friendly during the time of project implementation. The Rural Health Project was among the first primary health care projects implemented in sub-Saharan Africa, and enjoyed much attention and publicity. In recent years, however, A.I.D. has experienced a program shift away from primary health care Der se to an emphasis on maternal and child health care and child survival interventions (growth monitoring, immunization, oral rehydration therapy, nutrition education). While primary health care needs are often subsumed into an MCH project, they may not receive adequate resources to meet the demands of the larger community. This shift in emphasis appears to be taking place within USAID/Dakar. While a child survival program will be designed for implementation within the next year, with some primary health care components, there at present are no plans to continue support for the Rural Health Project once it reaches its project completion date (March 31, 1989).⁵

2.4 Socio-Cultural Factors

Two socio-cultural factors were not recognized at the onset of project implementation, and contributed to problems in maintaining continuity of project staff at the local level. First, hoping to facilitate supervision, stock supply and record keeping, the project recruited literate individuals to serve as VHWS. This raised two obstacles to project functioning. The VHWS were sometimes selected from communities other than the ones in which they were assigned to serve, thus they were perceived of as outsiders, with whom the local villagers did not feel comfortable. Also, in a country such as Senegal which still has high levels of illiteracy, the ability to read and write French remains the ticket to better employment. There was high turnover among the VHWS in the early stages of the project, particularly after they had further improved their qualifications through the project training component; many left the project seeking employment elsewhere.

⁵The assessment team received conflicting information on this point; it now appears that the project will receive some continued funding for an additional year.

Second, young women were often selected to serve as midwives for the health huts. Although they had been trained, they were often deemed unacceptable as they had not experienced childbirth themselves, or had not delivered many babies.

Gender inequalities influenced project implementation in that the project director, a dynamic midwife, was faced with implementing decisions within a male, physician-dominated society. She apparently compensated for many potential obstacles by collaborating closely with the training director and local medical officers, who offered support for her within and outside the project. This system was successful for some time, until a falling out with her supporters caused the director to devote more and more time to strategizing, and less to project direction.

2.5 Economic Factors

The Sine Saloum region is the "peanut basin" of Senegal. Peanuts are the major export crop of the nation, and two-thirds of the crop is produced in Sine Saloum. During the peak agricultural season between May and October, labor migration into the area is appreciable. To the extent that crops are good,

people in the region are assured a fairly stable income, and are able to pay the minimal amounts requested for health care and medications.

Nationally, the project has been implemented during a period of economic stagnation. While the health budget has remained fairly stable in absolute terms, in real terms national allocations to the Ministry of Public Health have declined during the past decade.

One effect of the RAT was to allow the regions greater control over their budgets, within line item proportions set by the central government. While this allowed a great deal of latitude, the Governor of Fatick was unable to increase his allocation to health above the eight percent ceiling imposed centrally. Thus, even when the will was present to address the pressing needs of the region, national economic policies hampered its realization.

2.6 Private Sector and Non-governmental Organizations

There was some competition apparent between private and project sources for drugs and medication. Until an equitable pricing policy was established, people shunned the health huts if they believed the drugs they distributed were available elsewhere at lower cost. Apparently, basic medications such as the aspirin and malaria prophylaxes stocked by the health huts were freely available at much lower cost in the Gambia, a neighboring country which shares a common border with the Sine Saloum region. Whether from the Gambia or another source, basic drugs are often available in local markets also, at a price slightly higher than that paid at the health hut.⁶

The project was implemented through the government Ministries noted above, and did not require the availability of NGOs to undertake project activities.

2.7 Implementing Institution

Three Government Ministries, Public Health, Social Affairs and Construction were responsible for the implementation of the SSRHP, with the Ministry of Public Health taking the lead role. The project flourished during the early 1980s, following its redesign, under the authority of a dynamic and public health oriented Minister. Since 1985, however, there have been three changes of Minister, and the project activities have not been followed as vigorously nor championed as strongly at very high levels.

⁶During March 1989, aspirin was sold for 5 CFA per tablet at the health huts, and was available in the Kaolack market for 10 CFA. Senegalese law requires that aspirin be dispensed only through health facilities by prescription.

The Ministry of Public Health, consistent with the mandate of the Territorial Administrative Reform delegated administrative authority for the project to the region itself, and to the Regional Governor in particular. This proved disastrous, as the Governor in office at the time of project initiation insisted upon handling day to day project affairs himself, while he was simultaneously occupied with the numerous responsibilities of his position.

At the same time, coordination among the various ministries and the communities within which the project was operating was extremely difficult. Each pursued their own tasks, often conflicting with work underway in another agency. Rivalry between the Ministry of Public Health and the Ministry of Social Affairs, which had been a single Ministry at one point, slowed project activities. (This was alleviated somewhat when the redesigned project shifted major project responsibilities to the MOPH.)

Two actions were taken which resolved many problems. First, administrative authority shifted to the chief physician of the region and was brought to the project implementation level. This facilitated more direct communication with the MOPH when required, but allowed for a more ready integration of project activities into the existing national health structure.⁷

Second, at the time of the project redesign, a coordination office was opened in Kaolack in order to more closely supervise project implementation in the departments. An organogram of the implementing agencies shows this office to be parallel to the Regional Chief Physician, while at the same time being under his authority. The office is below the MOPH, but separate from it and not fit into the existing structure.

2.8 International Donor Policies and Coordination

There appears to have been an effective division of labor such that Sine Saloum was viewed as A.I.D.'s territory in health-related matters. Prior to the implementation of the project, UNICEF had handled health activities there, and had trained midwives to work in rural maternities. There was also a Dutchfunded project to establish drug depots in villages which overlapped for some time with the SSRHP.

2.9 National Commitment

In 1978, Senegal attended the international health conference

⁷The comparative autonomy of this position varied with its incumbent. The rotation of the Chief Physician later found the progress of the project again altered, as the replacement physician required central MOPH approval for activities, imposing unwarranted delays.

at Alma Ata and a presentation of the goals of the Rural Health Project was made. Project staff were again encouraged by the affirmation of the importance of primary health care, and by the GOS public stance that the wide availability of low cost health services was a national priority.

The acceptance of the Alma Ata Declaration committed Senegal to a policy of primary health care which it follows to this day. National adoption of primary health care goals did much to foster the dedication of project staff.

While there was overall commitment to the goals of this project, there were nonetheless some factions opposed to its objectives. Opposition was mounted at both technical and administrative levels, with perhaps the latter being more strong. From a technical standpoint, until recently the principal focus of Senegal's health care program had been curative treatment. This reflected the training most health care workers received, heavily influenced by the French medical model, and the dominance of urban and periurban areas in garnering disproportionate shares of the national health budget, with resources mainly directed to hospital support.

Administratively, public sector employees were faced with implementing the decentralization policy of the government, effectively reducing their own power as they did so. As might be imagined, struggles emerged, both implicit and explicit, as to where the lines of authority and responsibility were to be placed.

3. PROJECT CHARACTERISTICS

3.1 Negotiation Process

The original Sine Saloum Rural Health Project was designed almost wholly by A.I.D., with only limited participation of Senegalese counterparts. In contrast, the redesign of the project was a year-long process which involved personnel from the Ministries of Public Health, Finance, Planning, and Social Welfare, as well as health workers in the field who were polled for their input. The first two years of activity following the redesign were remarkably productive, as the project took only half as much time to do work similar to that done in the first phase. The project was truly adopted by all staff as one of their own making.

3.2 Implementing Institution and Management

With the redesign, collaboration of MOPH and A.I.D. was established more formally, and quarterly meetings were set for reporting and planning. The early 1980s appear to have been halcyon days for the project. The Minister of Health was dynamic, and committed to public health issues; he took a personal interest in the progress of the Sine Saloum Rural Health Project. At the same

time, the USAID Mission Director also placed a high value on health activities, and provided much needed support to the Health Officer, acting as a high level proponent for the project. The Health Officer, a physician, was unanimously described as a sympathetic, sensitive man who was very much at ease with Senegal, its people, its society, and its priorities. During this period, USAID staff members worked closely with their Senegalese counterparts in pursuing the implementation of the redesigned project.

The close relations with USAID/Dakar were weakened in 1984-1985 when both the Mission Director and the Health Officer changed; the Minister of Health was replaced at about the same time. The new Mission Director is more formal in her relations with host country counterparts, and is more concerned with administrative issues than health-related ones. The Health Officer, a pediatrician, focused primarily on management aspects of the project. Her brusque nature and awkward French slowed her acceptance by local counterparts, although after several months her true commitment to the project goals was recognized and appreciated. Unfortunately, by the time all parties had adapted to each other, this Health Officer became ill, left Dakar, and was replaced by a Program Officer with "Acting" authority for the project, throwing management into limbo once more.

Within the project itself, technical leadership was fairly stable during the early stages of the redesign implementation. The technical staff was stable and well-qualified, and the project included funds for long-term training in public health for about 14 upper level staff. The staff received some technical assistance from the Harvard Institute for International Development (HIID) in service delivery management, and worked with external experts to prepare training curricula and materials for the regional training center at Kaolack.

3.3 Financing

At the time of the first evaluation of the SSRHP, one third of the health huts constructed had already closed, many due to financial inviability. The posts failed to keep adequate account records and financial control. No criteria had been set for establishing the costs of drugs, and some huts were not charging amounts sufficient to both support the health personnel and restock medication. Most of the fee-paying health huts were within three kilometers of free health posts.

The proposed expansion of the number of health posts was questionable, as the GOS was unable to adequately maintain existing posts. Eight of the 15 health posts to be financed by A.I.D. were built by 1981, while none of the 6 to be constructed by the GOS were started. No additional construction was included in the redesigned project.

Subsequent to the redesign, more rational selection criteria for the sites of health huts were put into practice. This allowed a better distribution of facilities, and relieved the problems of political favoritism noted above. Also, a very important outcome of the project was the Government decision to require fee payment at all health posts throughout the country. Based on the experience of Sine Saloum, which demonstrated that low-income peasants were willing to pay for basic health care, fee-for-service policies were implemented nationally.

The follow-on project was designed to gradually decrease A.I.D. inputs to the project while at the same time increasing the support of the Government of Senegal. Counterpart funds accounting for forty percent of the project budget were released for the last two years of the project, after delay, and it is alleged that the funds were not matched to the project needs. Six staff members (chauffeurs, secretaries, maintenance staff) were not paid during the last quarter of 1988 into the first quarter of 1989, as the Government claimed they were not Ministry employees. (They had been hired by the project administrators.) It was only in March 1989 that the Government agreed to pay the back salaries of these individuals.

At the same time that the overall national health budget is low, and funds allocated from the central government are inadequate, the region itself has the discretion to earmark up to eight percent of the rural budget for health. This has been done in the Sine Saloum project area. (As noted above, efforts to increase this percentage have been denied).

The former project director contends that in order to best maintain benefits for clients, rural health posts must rely on the contribution of the service population, either through fees or local participation in the health hut management. She advocated not relying on state funds which are too often blocked by mismanagement or other obstacles.

3.4 Content Aspects

Content aspects of the project have been discussed under many of the sections identified above; additional features will be elaborated here.

The original project design called for extensive construction and renovation of health huts and posts, training and deployment of village health workers, supervisors, environmental sanitation workers, technical assistance and material support. A regional school for training workers in environmental sanitation was also to be renovated, with the expectation that graduates of the training program would then be detailed to the project area.

The redesigned project reduced the amount of construction to

be carried out, and reduced the number of health care workers to be trained. In addition, funds were included for the renovation of a building at the Kaolack Hospital Grounds to be used as a regional pharmacy, responsible for supplying drugs and medications to all health facilities in the region. Work with the school for environmental sanitation workers was suspended, as there were numerous problems with the availability of trained staff, many of whom were commuting from jobs in other parts of Senegal in order to teach there. A regional training center at Kaolack was renovated, however, with A.I.D. underwriting the construction of dormitories and refurbishment of classrooms, thus allowing a great expansion of the training center activities.⁸

By 1982, the villagers were sensitized to their roles, a management system was in place, and supervision of health workers was taking place regularly. Data on health hut utilization were being collected, permitting better planning, control and evaluation of activities. Increasingly, the village beneficiaries were able to assume local costs.⁹

Many of the men recruited as village health workers were unable to respond to first aid needs during the agricultural seasons, as they would often be at work in their fields some distance from the villages. They also often migrated during the dry season to secure employment elsewhere. As a result, it was decided to cross train midwives. They learned first aid skills and sanitation practices in order to cover for VHWS in time of need. The majority evidently found the training interesting, and were happy to acquire new knowledge that enabled them to help their communities. As health becomes an integral part of the development program of the nation, these people are in possession of alternative means to earn a living.

All nurses in the health posts were trained as trainers. They were exposed to new techniques and ideas, but requested still more training in management and community motivation, practical experience, and participation in evaluation of training needs.

The health staff were regularly supervised once nurses received motorbikes in 1981. Prior to that time, efforts to use horses and buggies (thought to be appropriate technology for the rural areas) were not successful. Problems emerged in the higher

⁸The training center is the only one of its type in Senegal, and is used by both the public and private sectors for training programs. Efforts are underway to expend the center's international reputation in the hopes that it can become a regional training center for West Africa.

⁹The profits on drugs distributed by the health huts ranged from 122 percent for aspirin to 13 percent for aureomycin.

than anticipated costs of the horses and buggies, the resistance to feeding them made by village leaders who wished to use the horses in their fields, their slow pace, the need to hire drivers, and the inaccessibility of some areas. Agents from Human Promotion were less regular in supervising the workers charged with village sensitization and motivation.

Little external technical assistance was offered at the local level. Assistance to managers and technical staff is discussed above under "Institutional and Managerial Aspects". Similarly, the project relied little on imported supplies, although the delivery of some drugs from the United States was delayed. Drugs previously imported will be available from local distribution centers at the conclusion of the project.

3.5 Community Participation

Community participation is both the *raison d'être* and the principle source of support for this project. The financial viability of the health huts rests on the support of the community, while at the same time improving its access to basic health care. Many villages have implemented ingenious income generating schemes in order to raise additional funds to pay the health workers and to maintain the buildings.¹⁰

The villagers now utilize the health huts, and indicate that they desire additional treatments to be available there, notably snake bite serum, rubbing liniment, cough syrup, and anti-tetanus serum.

The village management committee was responsible for general oversight of the health hut. They also participated in the recruitment and selection of staff. They handled the finances, and were responsible for reordering drugs and medications. An earlier evaluation reported that 88 percent of the VHWS received remuneration, with most being paid an annual contribution, and some receiving payment in kind. Seventyfour percent of the project midwives reported receiving payment after the delivery of a baby.

3.6 Project Effectiveness

The utility and acceptability of the health huts has been demonstrated by their widespread adoption in other parts of Senegal. While their introduction was planned by the Ministry of

¹⁰The team was told of one village management committee which had acquired a large number of chairs, and large cooking pots, which it rented to local residents at times of large celebrations or gatherings. Other committees organized dances for which admission was charged, or raised communal gardens for produce to sell.

Public Health, their demonstrated success in bringing trained health care personnel to the very local level, and in the community members' support of the system, has accelerated plans to develop similar systems throughout the country. Furthermore, the clear message sent to national decision makers that even the poorest individuals were capable and willing to pay for health care resulted in policy changes such that user fees are now charged at rural health facilities.

An important socioeconomic effect of the project results from the reduced time spent seeking care, as well as from the presumed increased strength and productivity of those treated when ill.

4. CONCLUSION

In conclusion, several factors suggest that the activities and benefits of the Sine Saloum project will be sustained after the anticipated end of project in 1990. It is well integrated into the normal regional administrative structure of the Ministry of Health. It has gained national and community funding sources. Training is a central component and likely to provide enduring benefits. Community participation appears to remain high and the project is viewed as relatively effective by participants.

APPENDIX E

FAMILY HEALTH PROJECT

1. OVERVIEW

Acceptance of family planning in Senegal has been a relatively recent phenomenon. Like most of Francophone Africa, Senegal for both local and colonial reasons has historically been pronatalist. However, with almost 7 million people and a population growth rate of over 2.9 percent that well exceeds actual and anticipated economic growth, Senegal has become increasingly aware of the need for some reduction in fertility. In 1979, with USAID and UNFPA support, the government established a National Population Commission with a population unit in the Ministry of Planning.

USAID has provided funding for family planning activities through two projects which together are anticipated to span the period 1978 to 1992. The first project (\$2.1 million) ended in 1985 and was immediately followed by the current \$20 million Family Health and Population Project (685-0248). The first project suffered significant delays in implementation -- primarily procurement problems. The project established 22 family planning centers of which 17 are still functioning today. It also appears to have succeeded in gaining some national recognition of the need for a National Family Planning Program. Efforts to gain clear policy decisions and to integrate family planning into the existing health system proved to be far more difficult than had been anticipated.

The current project supports an integrated effort of both the Ministry of Social Development and the Ministry of Health. The project sponsors the development of curriculum for training programs, training of midwives, procurement of contraceptives, I.E.C. activities, and other promotional programs. Family planning activities have been gradually integrated into the MCH network of the MOH. Significant levels of technical assistance is currently provided. A major effort in I.E.C. appears to be bearing fruit. The project also has contributed to research in demography (Enquete Demographique et Sante) which has assisted in planning and promotion efforts. Nevertheless, acceptor rates remain low with only 7 percent of married women of reproductive age in Dakar currently using contraceptives.

The following section reviews the factors for the Family Health Project which suggest its potential to be sustained.

2. CONTEXTUAL FACTORS

2.1 Natural Disasters

Our informants felt that the long period of droughts has contributed to a change in attitudes from pronatalist to concern

for reducing fertility. It is increasingly clear that Senegal's weak resource base cannot keep up with the current rate of population growth.

2.2 Political Context and National Commitment

Even after Independence, Senegalese leaders appear to have adhered to the French pronatalist policies that had been adopted by the colonial governments. Nevertheless, there appears not to have been strong organized opposition to family planning programs.

The government did establish a National Committee on Population in 1979 and many high officials, including the current President, have made public declarations in favor of family planning.

Despite these efforts, the government has not shown major commitment to family planning. Legal obstacles to easy access remain in the form of required lab tests for women before obtaining oral contraceptives. There has been little progress in the development of a national family planning strategy and only a small government budgetary allocation.

While the political context is currently suffering some instability which may threaten the implementation and sustainability of the project, it is likely that the current gradual process of gaining political support will gain momentum and national commitment will emerge over time.

2.3 Bilateral U.S. - Senegal Relations

Good bilateral relations continue between Senegal and the U.S. and the USAID mission is firmly behind the Family Health Project. These factors may contribute to future sustainability.

2.4 Socio-Cultural Factors

Well known socio-cultural constraints to family planning acceptance are present in Senegal as they are in many countries in Africa and elsewhere. Cultural support for large families, the view that procreation is the basis of marriage, and the social-security role of children are all reasons for the cultural resistance to family planning. Although the Muslim religion -- followed by 80 percent of the population -- does not pose the same orthodox opposition to family planning that the Catholic Church does, there is little religious support for fertility reduction.

2.5 Economic Context

Ironically, as with the drought, the long secular economic decline may have raised awareness among the government elite of the need for fertility reduction. However, it is not clear that the

rest of the population perceives this need. Indeed, it is possible that economic decline contributes to the perception of the need for more children to provide for old age security.

The austerity program which has led to declining government contribution to the health sector also means that it is less likely that the government will be able to contribute its own resources to family planning activities in the foreseeable future.

2.6 Private Sector

At the present time, it does not seem that the private sector and commercial firms are making a major contribution to family planning in Senegal. Physicians charge high fees for services (\$70 to \$100 for an IUD insertion) and the private sector prices of contraceptives are 4 to 5 times more than public sector charges.

PVOs have been extremely instrumental in the family planning movement in Senegal. The first family planning effort was sponsored by the Pathfinder Fund and it is expected that PVOs will continue to be substantial donors in the future.

2.7 Implementing Institutions

Family planning projects have been implemented through two ministries -- MOH and the Ministry of Social Development. As we have discussed in previous sections both these institutions have weak, fragmented administrative structures with frequent personnel turnover and low skill levels. While they have been decentralized to the regions, national level family planning activities -- such as I.E.C.-- appear to be centralized. None of these factors is likely to be conducive to sustainability of the program.

2.8 Donor Coordination

The two major donors in family planning -- A.I.D. and UNFPA -- despite separate vertical administrative structures, are fairly well coordinated. It is likely that the World Bank will include family planning in future project activities. If coordination continues to characterize donor activities in family planning, it is likely that this will contribute to sustainability.

3. PROJECT CHARACTERISTICS

3.1 Negotiation Process

Project negotiation primarily involved the Ministry of Health. The Ministry of Social Development --responsible for I.E.C. activities -- was not as active in project design.

The current project was negotiated in a long (6-7 month) period and appears to have involved a mutually respectful process

of give and take at the technical level. Higher political and policy levels were less involved in the project design -- suggesting that opportunities for gaining higher level commitment were lost.

3.2 Institutional and Administrative Characteristics

Project implementation has been hampered by the division of responsibility for the project between the Ministry of Social Development and the MOH. This division has provided significant opportunities for administrative turf-fighting and for delays in implementation. A.I.D. contributed to delays through its cumbersome procurement procedures which led to shortages in contraceptives in the first project.

The current project has provided a coordinating technical assistance and training in administration and management which has probably improved implementation. There were complaints, however, that too much of this was in the hands of ex-patriates, rather than Senegalese.

Project activities have been gradually integrated into the existing MOH health center network, however, separate family planning clinics are also in operation.

3.3 Financing

We identified almost no national government contribution to the costs of the family planning program, other than the salaries of the nurses who are trained in family planning.

There are some cost-recovery activities through women's groups which charge fees for services and for contraceptives.

3.4 Content Aspects

The training activities in the project have been strong. Curricula have been well designed for several types of training programs. 1500 nurses have been trained in family planning. 350 midwives have also received training with an 8 module in-service training program. In addition short-term overseas training for physicians has been effective.

The I.E.C. component has effectively designed slogans, posters and newspaper articles as well as an innovative "Welfare Train" to spread family planning messages at rail stations throughout Senegal. In general these projects have been designed with appropriate technology.

3.5 Community Participation

The women's groups which engage in promotional activities and

charge for some services and contraceptives provide an active basis for community participation in this project.

3.6 Project Effectiveness

The family planning projects have been able to make some steady progress in developing awareness, integrating activities into the MOH system, creating 22 family planning clinics, and gaining some acceptors. However, the achievements have been quite limited. Current estimates suggest that only 7 percent of the women in fertile age in Dakar are using family planning methods. The project estimates that by 1992 this number will grow to 21 percent of the women in urban areas and 5 percent in rural areas. Nevertheless, unless the project can demonstrate significant acceptor rates, it is not likely to be viewed by policy makers as particularly effective.

4. CONCLUSION

The Family Health Project, like other population projects in Latin America and Africa, does not seem to be sustainable without continuing foreign funding. Although it is integrated into the Ministry of Health and Ministry of Social Development and it has a significant training component, it does not have national funding sources, has gained little community participation and is not viewed as particularly effective in achieving its goals of increasing acceptor rates.

APPENDIX F

INTERVIEW CONTACTS

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